#### Manual for CPUP adult assessment form

At the first CPUP assessment, replace "since the last assessment" by "during the last year".

#### Sid 1

Form of housing – state the type of housing, for example own residence, sheltered housing, lives with parents.
Assistant – if yes, state the number of hours/week.
Interpreter – if yes, state the language, also sign-language interpreter.
Employment, studies, and occupation – state the type and extent.

# Page 1

## **CP** subtype

The CP subtypes are classified by the dominating neurological symptom such as: spastic unilateral, spastic bilateral, dyskinetic, ataxic or non-classifiable/mixed type. These symptoms are described in the training CD from SCPE which was translated into Swedish in 2006. State the subtype that has been stipulated by the neuropediatrician or neurologist.

## Page 1

## Manual Ability Classification System, MACS I-V

Tick the appropriate box for the classification that the person belongs to according to the manual. The manual can be obtained from the MACS website <u>www.MACS.nu</u>.



![](_page_0_Picture_12.jpeg)

## Page 1 Gross Motor Function Classification System Expanded and Revised, **GMFCS-E&R**

The GMFCS-level must always be registered in order for Computo to generate correct reports.

The Gross Motor Function Classification System for cerebral palsy is based on self-initiated movement, with emphasis on sitting, transfers, and mobility. The guidelines can be obtained from http://motorgrowth.canchild.ca/en/GMFCS/resources/GMFCS-ER.pdf

# Page 2 Active joint range of motion

Functional test with assessment performed in a sitting position.

## Page 2 **Passive joint motion**

Baseline position: supine. Round off the degrees measured to the nearest even five/ten. Passive motion is measured using a goniometer. Alternatively, supination and pronation in the forearm can be measured using a so-called Prosupinator. If this is used, please state this in the commentary field. Important note: always measure in the same manner. The values stated on the form for motion are guidelines and not normal ranges. Record any pain while investigating joint motion.

## Shoulder

#### Abduction

References:

Baseline position: Supine with abducted and externally rotated shoulder, if possible with straight elbow Parallel to the spine Parallel to humerus

## Flexion

Baseline position: Supine with flexed shoulder in neutral position, if possible with straight elbow Parallel to the spine References: Parallel to humerus

![](_page_1_Picture_15.jpeg)

![](_page_1_Picture_16.jpeg)

# **External rotation and internal rotation**

Baseline position: Supine with shoulder at 90° abduction, elbow at 90° flexion, forearm pronated. Vertical to ulna (alternativly parallel to the plinth) References: Parallel to ulna

![](_page_2_Picture_3.jpeg)

Neutral

![](_page_2_Picture_6.jpeg)

External rotation

Internal rotation

#### **Elbow**

## **Extension and flexion**

Baseline position: References:

supine with shoulder slightly abducted, forearm supinated parallel to the humerus parallel to the radius

Straight elbow  $= 0^{\circ}$ . Extension defect is to be stated as - (minus) X°.

![](_page_2_Picture_14.jpeg)

Elbow extension

![](_page_2_Picture_16.jpeg)

Elbow flexion

#### **Supination and pronation**

Baseline position:supine with shoulder adducted, upper arm fixed against the thorax,<br/>elbow at 90° flexionReferences:parallel to the humerus<br/>volarly over the wrist in supination

dorsally over the wrist in supmation

![](_page_3_Picture_4.jpeg)

![](_page_3_Picture_5.jpeg)

Neutral position

Goniometer placement

![](_page_3_Picture_8.jpeg)

Supination

![](_page_3_Picture_10.jpeg)

Pronation

## Wrist

#### **Extension and flexion**

Baseline position: References: supine with elbow at 90° flexion, forearm pronated parallel to the ulna parallel to metacarpal III

Straight wrist  $= 0^{\circ}$ . Extension defect is to be stated as - (minus) X<sup>o</sup>

![](_page_3_Picture_17.jpeg)

Extension with flexed fingers

![](_page_3_Picture_19.jpeg)

![](_page_3_Picture_20.jpeg)

Extension with straight fingers Wrist flexion

I

#### Ulnar deviation and radial deviation

Baseline position: References: supine with forearm pronated dorsally parallel to midline of forearm dorsally parallel to metacarpal III

![](_page_4_Picture_4.jpeg)

![](_page_4_Picture_5.jpeg)

Ulnar deviation

Radial deviation

## Hip

#### **Hip abduction**

Hip abduction can be measured in two different ways:

- 1. supine with extended hips and knees.
- 2. supine with flexed hips and flexed knees. This baseline position is used when the above is not possible. Then mark "yes" on "deviates from standardized baseline position" and state flexed hip.

Baseline position: supine with extended hips and knees

References:

parallel to imaginary line between anterior superior iliac spines (ASIS) on a level with the upper edge of the greater trochanter. points at the patella.

Alternative baseline position: supine with flexed hips and flexed knees.

![](_page_4_Picture_17.jpeg)

Abduction with extended hip

![](_page_4_Picture_19.jpeg)

Abduction with flexed hip

#### Internal rotation and external rotation

Hip rotation can be measured in two different ways:

- 1. Supine with flexed hips and flexed knees.
- 2. Prone with extended hips and flexed knees. If this baseline position is used, then fill in "yes" at "deviates from standardized baseline position" and state prone position.

Baseline position: supine with flexed hips and knees.

References: perpendicular to imaginary line between both ASIS along the anterior edge of the tibia.

![](_page_5_Picture_7.jpeg)

![](_page_5_Picture_8.jpeg)

![](_page_5_Picture_9.jpeg)

![](_page_5_Picture_10.jpeg)

Neutral position

Internal rotation

External rotation

Alternative baseline position: prone with extended hips and flexed knees. Immobilize the pelvis in order to minimize pelvic rotation. Rotate the hip until it stops. References: vertical (alternatively parallel to the plinth) parallel to anterior edge of the tibia

## **Hip flexion**

Baseline position:	supine, immobilize the pelvis by extending the opposite leg.
References:	parallel to the column, parallel to the femur reference point: greater trochanter

![](_page_5_Picture_17.jpeg)

#### **Hip extension**

Baseline position:supine with extended hip and the pelvis neutral.<br/>immobilize the pelvis by flexing the opposite leg.References:parallel to the column<br/>parallel to the femur – reference point: greater trochanter .

Straight hip = 0°. Any extension defect down to the horizontal position is stated as - (minus) X° If hip extension exceeds 0°, then lower the thigh outside the edge of the plinth.

Alternative baseline position: prone with extended hips. .

![](_page_6_Picture_5.jpeg)

## Knee

## **Popliteal angle**

Baseline position:	supine with leg concerned flexed 90° at hip.	
	immobilize the other leg in the extended position	
	to stabilize the pelvis.	
References:	parallel to the femur, points at the greater	
	trochanter	
	parallel to the anterior edge of the tibia, points at	
	the lateral malleolus.	

State knee fold angle; extended knee  $= 180^{\circ}$ 

![](_page_6_Picture_10.jpeg)

#### **Knee flexion**

Baseline position:supine with hip flexed 90°.References:parallel to the femur, points at the greater<br/>trochanter.<br/>parallel to anterior edge of the tibia, points<br/>at the lateral malleolus.

State knee angle; extended knee  $= 0^{\circ}$ 

![](_page_6_Picture_14.jpeg)

#### **Knee extension**

Baseline position: supine with extended hips and knees.

References:

parallel to the femur, points at the greater trochanter . parallel to anterior edge of the tibia , points at the lateral malleolus.

Note any hyperextension, knee angle: extended knee  $= 0^{\circ}$ Extension defect is to be stated as - (minus) X°

![](_page_7_Picture_6.jpeg)

#### Foot

#### Dorsiflexion with flexed knee

supine, 90° flexion of hip and knee.
Stabilize the subtalar joint by immo-
bilizing the calcaneus. Supinate the
forefoot in order to prevent movement in
the intertarsal joints.

![](_page_7_Picture_10.jpeg)

References: parallel to the anterior edge of the tibia, points at the head of the fibula and the lateral malleolus. parallel to the lateral edge of the foot, metatarsal V.

> 90° angle in the ankle joint = 0° dorsiflexion Restricted dorsiflexion (below zero position) to be stated as–(minus) X°.

#### Dorsiflexion with extended knee

Baseline position: supine with extended hips and knees. Stabilize the subtalar joint by immobilizing the calcaneus. Supinate the forefoot in order to prevent movement in the intertarsal joints.

![](_page_7_Picture_15.jpeg)

References: parallel to the anterior edge of the tibia, points at the head of the fibula and the lateral malleolus. parallel to the lateral edge of the foot, metatarsal V.

> 90° angle in the ankle joint = 0° dorsal flexion Restricted dorsal flexion (below zero position) to be stated as– (minus) X°.

#### Page 2

#### **Assessment - foot**

State whether the person can bear weight on both feet or not. All types of weight-bearing on both feet, with or without support, are permitted. That is to say, the whole foot does not have to bear weight. State whether the weight-bearing right or left heel is normal, in a varus or valgus position. (If the person cannot bear weight on the heel then skip this assessment).

# Page 3 Spasticity, Muscle tone

Assessment of muscle tone at rest according to the Modified Ashworth Scale by Bohannon, Smith (1987)

- **0** No increase in muscle tone.
- 1 Slight increase in tone with a catch and release or minimal resistance at end of range.
- +1 As 1 but with minimal resistance through range following catch.
- 2 More marked increase in tone through ROM.
- 3 Considerable increase in tone, passive movement difficult.
- 4 Affected part rigid.

#### Baseline positions when estimating muscle tone.

Elbow flexors - supine (for the forearm in flexion-extension, feel the tone when the forearm is extended/stretched out).

Adductors- supine, extended knees and hips. (leg is abducted-adducted, feel the tone while the leg is abducted).

Knee flexors - supine, 90° hip flexion (feel the tone while the knee is extended/stretched out).

Plantar flexors - supine, extended hips and knees (for the foot in dorsiflexion-plantar flexion, feel the tone while the foot is dorsiflexed).

If it is difficult to estimate tone due to pain or contractures, then state this under remarks.

# Page 3 Thumb

Abduct passively volarly and record whether there is stiffness or whether there are any signs of pain.

Classification of thumb-in-palm according to House type I-IV

This is a description of which muscles are involved, but does not score the degree of severity. It should be assessed when the person opens his or her hand to grasp an object. Note under remarks whether the person has or does not have the thumb in palm. If the person does not cooperate, then feel which muscles are tense/spastic.

#### Any thumb-in-palm should be classified according to House:

House J H, et al. A Dynamic Approach to the Thumb-in-Palm Deformity in Cerebral Palsy. The Journal of Bone and Joint Surgery, 1981; 63-A; 2: 216-225. (Modified by the national group for occupational therapists for CPUP in 2009)

![](_page_9_Picture_7.jpeg)

Type I

![](_page_9_Picture_9.jpeg)

Type II

![](_page_9_Picture_11.jpeg)

Type III

![](_page_9_Picture_13.jpeg)

Type IV

# Page 3 Simultaneous wrist and finger extension

The intention of this classification according to Zancolli is to estimate the degree of active ability to extend in the wrist and fingers. It requires active cooperation by the person who, e.g. is asked to do "high five" or is observed manipulating e.g. balls or tins in front of himself/herself on the table. State whether the person can manage or not, not what he or she uses most.

If the person who is assessed as Group 1 can extend the wrist 20° or more, then tick the appropriate box. This means that both the box and Group 1 can be marked at the same time.

Zancolli, E.A & Zankolli, E.R Surgical management of the hemiplegic spastic hand in cerebralpalsy, Surg Clin North Am, 1981;61: 395-406

#### Group 1 + X

Can actively fully extend the fingers with wrist extended  $20^{\circ}$  or more. If yes, mark both 1 and X.

#### Group 1

Can actively fully extend the fingers with wrist extended above 20° of flexion.

#### Group 2 A

Can actively fully extend the fingers but only if the wrist is flexed more than 20°. Can actively extend the wrist with fingers flexed.

#### Group 2 B

Can actively fully extend the fingers but only if the wrist is flexed more than 20°. Cannot actively extend the wrist.

Group **3** Cannot extend fingers or wrist.

![](_page_10_Picture_14.jpeg)

![](_page_10_Picture_15.jpeg)

![](_page_10_Picture_16.jpeg)

![](_page_10_Picture_17.jpeg)

![](_page_10_Picture_18.jpeg)

![](_page_10_Picture_19.jpeg)

# Page 4 Classification of hand function according to CPUP-modified House

Each hand's ability to grasp should be assessed separately when observing activities which require two hands. Even if the person cannot coordinate his or her hands, both hands must be classified. First state which **group** is most accurate to describe the person's ability to use the hand: not at all, passive hand/assisting hand active hand/assisting hand or manipulating hand. State the **functional level** best describing how effectively the person usually holds and grasps. If there is a doubt between two functional levels then state the lower level.

The position of the wrist may indicate whether the person has an unstable grasp or not. The classification is made with respect to hand function adequate for the age concerned.

Group	Functional level	
Does not use	0	Does not use
Passive hand	1	Stabilizes without grasp
	2	Fair passive grasp
	3	Good passive grasp
Active hand	4	Poor active grasp
	5	Fair active grasp
	6	Good active grasp
Manipulating hand	7	Reduced dexterity
	8	No limitation

# Page 4 Bimanual ability

Assess whether the person can use both hands together spontaneously in activities which require such use.

Examples of suitable activities to assess bimanual ability

- Button, unbutton buttons.
- Pull zip up and down.
- Put on cap, hat, necklace, gloves, socks.
- Open wallet with Velcro/zip or purse, take out money and put it back.
- Put toothpaste from toothpaste tube with screw cap on a toothbrush.
- Pull off toothbrush packaging.
- Throw and catch a large ball/balloon.
- Carry/lift objects in a tub/crate/on a tray with two handles.
- Remove and put on a cap for felt-tip pens.
- Remove lid from a can.
- Unscrew and screw nuts on a thick bolt.

## Page 4

## Lying - the most common resting and sleeping position

State the resting and sleeping positions and how many hours/24 hours the person is lying.

Maintain position:

- Can remain in a lying position without support.
- Need assistance or support to remain in a lying position.

Change position:

- Can change posture or change position independently while lying, e.g. turn from supine to side lying.
- Can co-operate in changing posture and position when lying but requires some help.
- Completely dependent on assistance to change posture and position while lying.

# Page 4

## **Assessment supine**

Mark yes for symmetry, no for asymmetry

- Is the head midline or does it deviate from the midline in any direction?
- Is the trunk symmetrical or is there any asymmetry with deviation or rotation? Compare the distance from the shoulders to the pelvis.
- Is the pelvis in a neutral position or is it tilted or rotated?
- Are the legs separated and straight relative to the pelvis or is there a tendency to scissoring, wind sweeping or rotation?
- Are the arms resting in a relaxed position by the sides or are they tense and used to balance, steered by reflexes, tone or involuntary movements?
- Is the weight evenly distributed, or is one half of the body loaded more than the other?

## Page 4

#### Sitting – the most common

Several alternatives can be marked, for example if a moulded chair is used in combination with a wheelchair base or office/swivel chair frame. State "not sitting" only in those cases when the person is unable to sit even with adaptive seating. If no option is appropriate then state the type of sitting under remarks.

State also for how long the person is seated over/24 hours.

## Page 5

#### Assessment -sitting on a plinth

State whether the person is assessed in sitting without a support or with support from a chair, sitting system or another person.

Mark yes for symmetry, no for asymmetry

- Is the head midline or does it deviate from the midline in any direction?
- Is the trunk symmetrical or is there any asymmetry with deviation or rotation? Compare the distance from the shoulders to the pelvis.
- Is the pelvis in a neutral position or is it tilted, oblique or rotated?
- Are the legs separated and straight relative to the pelvis or is there a tendency to scissoring, wind sweeping or rotation?
- Are the arms resting in a relaxed position by the sides or are they tense and used to balance, steered by reflexes, tone or involuntary movements?
- Is the weight evenly distributed or is one half of the body loaded more than the other?

## Page 5

## Assessment of spine and scoliosis

State whether or not the person has undergone scoliosis surgery. If yes, the assessment of the spine and scoliosis is not obligatory.

Please state in which position the spinal assessment is performed. Choose first and foremost the standing baseline position with **correction for any pelvic tilt due to differing leg lengths or contractures in the lower extremities**. If this is not possible then the assessment is made in the sitting position, **with correction for any pelvic tilt.** If this is not possible either, then assessment is made in a lying position.

The degree of scoliosis (mild, moderate or pronounced) is a rough estimate of the magnitude of the scoliosis. Estimation of the degree is decisive for whether an x-ray should be taken according to the follow up programme or not.

Assessment of whether the scoliosis is correctable or not is best made in prone lying. Try to aligne the spine with your hands. If the spine can be aligned, then the scoliosis is correctable. Sometimes the scoliosis is partially correctable, but the spine cannot be completely aligned, in that case state not correctable.

![](_page_14_Figure_1.jpeg)

Examples of terminology:

I Right convex thoracic scoliosis

II Right convex thoracolumbar scoliosis

III Left convex lumbar scoliosis

IV Right convex thoracic and left convex lumbar scoliosis

(From Danielsson and Willner: Barnortopedi and scolioser. Studentlitteratur 1999, with permission of the authors)

# Page 5 Brace/Spinal jacket

Include all types of individually tailored spinal braces. State type of brace and for how long it is used/day.

# Page 6

## Standing

Note that "stands independently without aid" does not preclude answering the question "uses standing aid". Independent standing does not mean automatically that the person does not have any standing aid.

Several alternatives can be stated for standing aid e.g. standing brace in combination with a tilt board. Orthopaedic shoes or orthoses used in combination with a standing aid can be noted under remarks.

## Page 6

#### **Assessment**-standing

State whether the person is assessed in standing without support or with support from another person or external support such as a handrail, walking frame.

Write yes for symmetry, no for asymmetry

- Is the head in the midline or does it deviate from midline in any direction?
- Is the trunk symmetrical and in neutral position or is there asymmetry with deviation or rotation? Compare the distance from the shoulders to the pelvis.
- Is the pelvis in the neutral position or is it tilting or rotated?
- Are the legs separated and in the neutral position relative to the pelvis or is there a tendency to scissoring, wind sweeping or crouched position?
- Are the arms resting in a relaxed position by the sides or are they tense and used in order to balance, steered by reflexes, tone or in voluntary movements?

• Is the weight evenly distributed or is one foot loaded more than the other?

# Page 7

## **Transfers**

State the most common method of transfers, such as to and from the bed or toilet.

# Page 7 Climbing up and down stairs

State the most common method of moving up and down stairs.

# Page 7 **Functional Mobility Scale (FMS)**

The Functional Mobility Scale (FMS) has been constructed to classify functional mobility in children, taking into account the range of assistive devices a child might use.

The scale can be used to classify functional mobility, document change over time in the same person and to document any change seen following interventions, for example orthopaedic surgery or selective dorsal rhizotomy.

The FMS rates walking ability at three specific distances and environments, 5, 50 and 500 metres, (or 5, 50, 500 yards).

Assessment is performed by the clinician on the basis of questions asked of the child/parent (not direct observation). The walking ability is rated at each of the three distances according to the need for assistive devices such as crutches, walkers or wheelchair. Orthotics which are regularly used should be included for the rating.

The FMS is a performance measure. It is important to rate what the person actually does at this point in time, not what they can do or used to be able to do.

To obtain answers that reflect performance, the manner in which the questions are asked of the person/parent is important. The questions we use to obtain the appropriate responses are: 1. How do you move around for short distances in the house? (5m)

2. How do you move around in and between classes at school? (50m)

3. How do you move around for long distances such as at the shopping centre? (500m)

The distances are a guide. It is the environment that is most relevant.

#### Qualifiers

The difference between 1–4 is self-explanatory, however the difference between 5 and 6 is less clear.

5 metres: people who require a rail for stairs would be rated as 5 and people who do not require a rail or help would be rated as 6.

50 metres: people who can walk on all surfaces including uneven surfaces and steps, particularly at school are rated as 6 and people who require help on these surfaces but can walk on level surfaces without help are rated as 5.

500 metres: people who can walk on all surfaces including rough ground, curbs, steps and in crowded environments in the community without help are rated as 6 and people who walk long distances only on level surfaces and have difficulty walking in crowds are rated as 5.

Ask the person to rate the most frequent mobility method for all three distances. FMS is a performance measure, rate what the person actually does. Note one score for each distance.

N= Does not apply:eg, does not complete the distance.

C= Crawling: crawls for mobility at home (5 m). (Do not use for 50 and 500 m)

1= Uses wheelchair: may stand for transfers, may do some stepping supported by another person or using a walker/frame.

2= Uses a walker or frame: without help from another person.

3= Uses crutches: without help from another person.

4= Uses sticks (one or two): without help from another person.

5= Independent on level surfaces: Does not use walking aids or need help from another person.\* Requires a rail for stairs. \*If uses furniture, walls, fences, shop fronts for support, please use 4 as the appropriate description.

6= Independent on all surfaces: Does not use any walking aids or need any help from another person when walking over all surfaces including uneven ground, curbs etc. and in a crowded environment.

NB!!! In this manual the wording "your child, it's, the child" has been replaced by "you, your, the person" to better suit the adults incuded in the follow-up programme.

# Page 7

## Wheeled mobility

State the most common method of wheeled mobility indoors and outdoors: self-propels, is pushed, does not use. If the person does not use a manual wheelchair or powered wheelchair, mark "Does not use" on both. If the person operates a powered wheelchair independently and is pushed in a manual wheelchair then mark both options.

## Page 8 Pain

State whether the person reports any pain and who answered the question (the person himself/herself or someone accompanying?)

If the person is in pain: note in the boxes where and how much ache or pain during the last four weeks.

State also how much the ache or pain has interfered with the person's normal work during the last four weeks. This includes both work outside the home and other daily tasks.

# Page 9

# Nutrition

State the current weight and height and the method used for the measurement. State also if the height is uncertain, difficult to measure (e.g. if there are pronounced contractures). Measure skinfold thickness at the level of the umbilicus, straight under the nipple and estimate whether there is some subcutaneous fat on the trunk >0.5 mm skinfold thickness or not <0.5 mm skinfold.

State whether the person has a gastrostomy or not.

# Page 9 Orthoses - definitions

State the orthoses that the person uses for the upper and lower extremities.

Examples of orthoses: Elbow orthosis Wrist orthosis Thumb orthosis Whole hand orthosis Supination orthosis

**FO** (insert)- Include all types of individually tailored inserts, proximally from the malleoli up to and including the metatarsophalangeal joints or distally, irrespective of material. The objective is to act on the subtalar joints and/or the midfoot.

**AFO** (Ankle Foot Orthosis) - include all orthoses which terminate proximally above the malleoli but below the knee joint and extend distally over the foot. The objective is to act above the ankle joint and/or distally. Fixed, "dynamic" or articulated orthoses are to be included. **KAFO** (Knee Ankle Foot Orthosis) - Include all the orthoses which terminate proximally

above the knee joint up to and including the greater trochanter and extend distally over the foot. Fixed or articulated orthoses are to be included. The objective is to act above the knee joint and ankle joint.

**KO** (Knee Orthosis )- include all the orthoses that terminate proximally above the knee joint up to and including the greater trochanter and extend distally to the malleoli. The objective is to act above the knee joint.

**HO** (Hip Orthosis )- include all the orthoses that extend over the femur. The objective is to act over the hip joints.

#### State the objective of the orthosis –treatment:

- to facilitate function
- to act on the body's structure, contracture prevention.

**Period of use:** state whether the orthosis for contracture prevention is used for > or < 6 hours/24 hours.

**Does the orthosis fulfil its function?** Mark yes or no and state the orthosis number (1, 2, 3 or 4) that is stated in front of the orthosis under State type.

Skin irritation/sores? State no or yes and the orthosis number (1, 2, 3 or 4)

## Page 9

#### Fracture

Refers to all types of fractures (reply "yes" or "no") and state the type of fracture under remarks.

# Page 10 Operations and treatment to reduce tone

State whether or not the person has undergone surgery (if yes, then which and when?). Deep brain stimulation and rhizotomy are to be stated under operation. State also whether the person has been given botulinum toxin (if yes, which muscles and

when?) or done postop training or post-botox?

State also whether the person has a baclofen pump or oral medication to reduce tone.

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