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# ACCURATE WEIGHING OF NEWBORN BABIES

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Training Manual [Version 2.2]



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# 1. Standard Operating Procedure (SOP) for weighing newborns

## General Instructions

- Do not deviate from the standard instructions given in the SOP
- Ensure that the newborn's weight is checked before the newborn leaves the labour room
- Calibrate the weighing scales at least once a week

Procedure for Weighing Newborns using a Beam or Digital Weighing Scale  
(Remember a digital weighing scale would be more accurate)

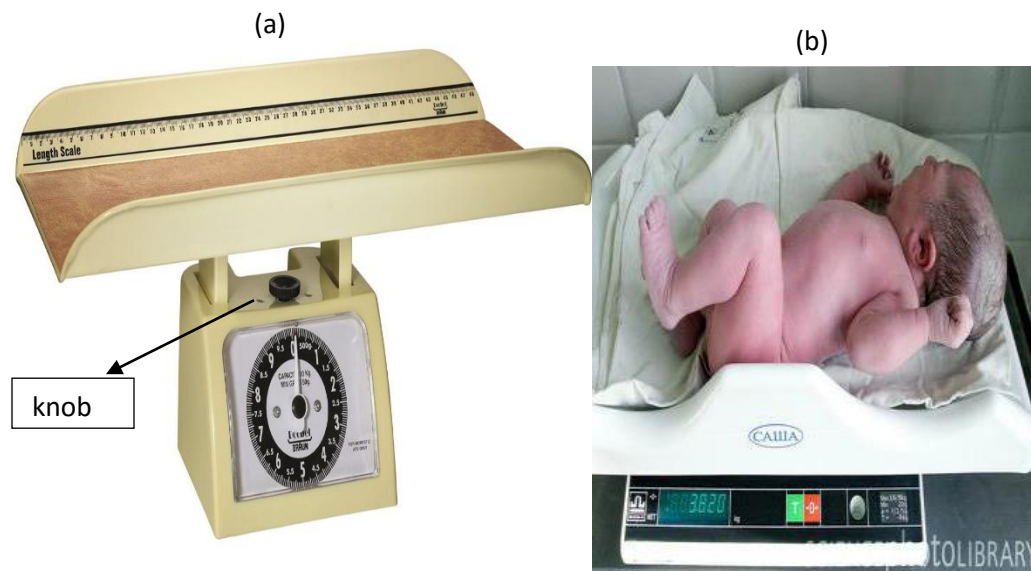


Fig 1. (a) Beam and (b) Digital Weighing Scales for newborns

1. Explain to the mother/caregiver about measuring weight.
2. Clean the tray / pan of the weighing scale (beam or digital, digital preferable) with spirit or soap and water soaked cotton swab or gauze.
3. Place a towel on the tray / panto prevent hypothermia of the newborn.
4. Adjust the weighing scale to zero.
  - i. In the beam scale use the knob to adjust to zero.
  - ii. In the digital scale, it might happen automatically or by manually adjusting the button<sup>1</sup>.
5. Wash hands thoroughly / use alcohol scrub before handling the newborn

<sup>1</sup> [www.newbornwhocc.org/ONTOP-DATA/Equipment-PDF/Weighing-scale/Weighing-scales-Reading-Material.pdf](http://www.newbornwhocc.org/ONTOP-DATA/Equipment-PDF/Weighing-scale/Weighing-scales-Reading-Material.pdf)

6. Place the newborn on the towel. Note the weight.
  - i. In the beam scale wait till the needle stops fluctuating (to the nearest 0.01 kg) and remove the baby.
  - ii. In the digital scale note the weight till the number visible is most stable, freeze the reading facility so that the weight will continue to be shown even after the baby is removed.
7. Place the newborn on mother for direct skin to skin contact immediately after or keep under radiant warmer if needed
8. Record the weight (accurately without rounding off decimal) in the newborn's case sheet (For example -- if the measured weight is 1800 gms., document it as 1800 and NOT as 2000 gms.)

## 2. Calibration of Weighing Scales (Beam type – manual / Electronic – digital)

- ❖ Calibration of instruments ensures accurate results by the equipment.
- ❖ Weighing scales should be calibrated as soon as the equipment is purchased and then atleast once in 2 weeks. This will ensure that faulty equipment are identified early and replaced.
- ❖ Newborn’s weighing scale can be calibrated with standard weights (Fig 2a or Fig 2b). The different weights are placed on the weighing scale and the weights displayed should be documented.



Fig2a. Standard weights



Fig 2b. Standard weights

Sample equipment calibration sheet for Newborn’s weighing scale		
Standard weight (gm)	Scale 1*	Scale 2
500	700	500
1000	1200	1200
1500	1700	1500

Here scale 1\* has a systematic bias of 200gm.

- ❖ The action to be taken when such difference occurs is that either the scale should be re-calibrated (using the knob in Figure 1a) or replaced or if either of this is not possible, the weight that is observed should be reduced by 200gms while documenting. It is important that a note is stuck on the weight scale for any health care worker to be aware of what action must be taken to correct for differences in measurement during calibration.

**Note:** Use Appendix 1-Calibration Sheet (weighing scale) for checking accuracy of weight scale and reporting to the office at regular intervals

### 3. Standardized Training, Practice and Certification

#### 3.1. Standardization Training

- ❖ All personnel who check the weights of newborns have to undergo standardization training.
- ❖ The setting for this training will be a combination of classroom as well as bed-side sessions.
- ❖ This will be carried out as demonstration and return-demonstration on baby mannequins first and then on live babies.
  - The procedure for checking newborn weight will first be demonstrated by a trainer on both the beam and digital scale
  - All participants will demonstrate the same procedure to the trainer
  - All participants will then be shown 10 different weight readings on a beam scale and expected to note down the weights on a the worksheet provided.
  - Participants will then be asked to check the weights of at least 5 baby mannequins. The weights of the mannequin babies can be altered using ISO standard weights to simulate normal birth weight, low birth weight (LBW) and macrosomia babies (newborns who have birth weight more than 4000gms.).



Macrosomic versus normal weight baby



LBW baby

#### 3.2. Practice in the real setting

- ❖ Following standardization training, all trainees must be given opportunity to practice measurements on a set of babies (at least 10 newborns), in the field/real-life setting. Participants can be taken to the postnatal ward where there are both LBW and other babies who are macrosomic, of normal weight, either lethargic or vigorously active.
- ❖ The trainer will demonstrate on how to check the weight of a newborn in the postnatal ward.
- ❖ Then participants should be given opportunity to check weights of newborns under direct supervision of the trainer.
  - It is preferable to give them opportunity to check weights of live babies who are either LBW, of normal weight, macrosomic; lethargic or vigorously active; as well as sick (e.g. birth asphyxia) babies if permissible from a sick newborn care

unit (SNCU), newborn stabilizing unit (NBSU) or neonatal intensive care unit (NICU).

- ❖ During practice trainees will also need to
  - Follow the steps of the procedure each time she/he practices
  - Follow steps to prevent spread of infection such as washing hands thoroughly, cleaning the equipment, and avoid unnecessary handling of the newborn.
  - Classify the babies as low birth weight (LBW) or normal weight.

### 3.3. Certification

- ❖ Practice sessions should be followed by a certification session. For this testing, all measurements are conducted on the babies in the real setting and the measurer is certified against the trainer - Lead Anthropometrist (L.A.).
- ❖ All the needed arrangements must be made. This includes
  - The arrangement of babies (at least 5 mannequins and 10 newborns),
  - Requisite number of equipment, cleaning material
  - Time allocation for measurement, grading and feedback.
- ❖ Appendix 2 is the test sheet for entering the values by the trainee measurer and the lead anthropometrist and then comparing the deviation of the values.
- ❖ Appendix 3 is the Checklist that is to be used for grading the trainee in the final exam

#### 4. Mentoring of Health Care Workers (in health facilities & in the community) on accurate birth weight measurement

The certified Nurse Mentors should follow the steps of checking weight (using Appendix 3. Checklist for Newborn Weight measurement and Wrapping of Newborn) when they go back to the health facilities or communities for training the other staff.

- ❖ Review with health care workers (postnatal ward, SNCU, NBSU, NICU or community) the importance of checking the weight of the newborn accurately and classification of newborns based on their weights
- ❖ Share findings of checking weights of newborns in the facilities
- ❖ Demonstrate using a mannequin how to check the weight of the baby correctly
- ❖ Use checklist (Appendix 3) when mentoring staff nurses in the facility to check the weight of babies
- ❖ Show them where to document the weight of the newborn



## Appendix 1: Calibration Sheet (weighing scale)

Calibrate the weighing scale and enter in the table below on the **15<sup>th</sup>** of every month:

**Name of the Hospital:**

**Date of calibration:**

<b>Standard Weight (g)</b>	<b>Weighing Scale 1 (Manual)</b>	<b>Weighing Scale 2 (Digital)</b>
<b>10 g</b>		
<b>50 g</b>		
<b>200 g</b>		
<b>500 g</b>		
<b>1500 g</b>		
<b>2500 g</b>		

Calibration completed by:

Date:

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Calibrate the weighing scale and enter in the table below on the **30<sup>th</sup>** of every month:

**Date of calibration:**

<b>Standard Weight (g)</b>	<b>Weighing Scale 1 (Manual)</b>	<b>Weighing Scale 2 (Digital)</b>
<b>25 g</b>		
<b>100 g</b>		
<b>250 g</b>		
<b>1000 g</b>		
<b>2000 g</b>		
<b>3000 g</b>		

Calibration completed by:

Date:

## Appendix 2. Sheet for anthropometry certification

MEASURE TEST FORM \_\_\_\_\_ Name: \_\_\_\_\_

<b>MEASUREMENT</b> _____ <b>UNIT</b> ____ <b>DATE</b> __ __ __ <b>MEASURE</b> _____ <b>MAXIMUM SCORE</b> _____ <b>EXAMINER</b> _____			
Subject No.	Examiner's Measure	Test Measure	Difference (%)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Total no.of +ve differences- \_\_\_\_\_

Total no.of -ve differences- \_\_\_\_\_

Total Score:

Result: Qualify/Repeat the test/Undergo further training

### Appendix 3. Checklist for Weight measurement and Wrapping of Newborn

Sl. No.	Observations	Mark	Participants											
			1	2	3	4	5	6	7	8	9	10		
1.	Cleans the tray/pan of weighing scale with spirit or soap and water soaked cotton swab or gauze	0.5												
2	Places cloth over the tray / pan of weighing scale in centre	0.5												
3	Sets the weighing scale to zero <ul style="list-style-type: none"> <li>adjusts knob so that reading is zero in beam scale</li> <li>allows the digital scale to adjust to zero automatically or uses the knob</li> </ul>	0.5												
4	Uses alcohol hand rub/washes hand thoroughly	0.5												
5	Places the mannequin/baby in the centre of the tray / pan	0.5												
7	Notes and records the weight accurately. <ul style="list-style-type: none"> <li>waits till the needle is more or less stable, notes the reading on the scale to the nearest 0.01kg (10gms)</li> <li>waits till the number displayed is more or less stable, freeze the reading.</li> </ul>	2.5												
8	Classify the mannequin / baby - LBW	0.5												
9	Puts clothes for mannequin / baby: cap, napkin, socks and mittens	0.5x4 =2												
10.	Takes the towel and wraps the mannequin / newborn making sure that the head and feet are well covered <ul style="list-style-type: none"> <li>- head covered</li> <li>- feet covered</li> <li>- body well covered</li> <li>- swaddling done not too tight or too loose</li> </ul>	0.5x4 =2												
	<b>TOTAL</b>	<b>10</b>												

Total for weight checking measurement (based on 3, 5 & 7 above) → score out of 3.5

Total for weight checking procedure (based on 1 to 10 above) → score out of 10

