

# PEDIATRIC - Whole-bowel irrigation

**(WITH a feeding pump)**

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## 1. Choice of nasogastric tube:

- Choose the nasogastric tube (Salem or other type) according to the patient age

AGE	(FR)
< 3 years	5 to 8
3 to 6 years	8 to 10
6 to 12 years	10
12 to 15 years	10 to 14
15 years and older	14 to 16

\* Table elaborated from CHU Sainte-Justine nursing technique tool

## 2. Reconstitute 4 L of polyethylene glycol oral solution: See section on reconstitution

- The total amount of polyethylene glycol needed may vary from patient to another, reaching up to 33 liters.

## 3. Equipment needed (see also Section on Available Products for Ordering Information)

- For patient weighing **16 kg and less and 35 to 40 kg**:
  - 1 Kangaroo™ ePump Enteral Feed and Flushes Pumps
  - 1 kangaroo™ ePump Enteral Feeding Sets (1 L bag with tubing)
  - 1 nasogastric tube (proper caliber according to the patient age)
- For patient weighing **17 to 34 kg and 41 to 55 kg**:
  - 2 Kangaroo™ ePump Enteral Feed and Flushes Pumps
  - 2 kangaroo™ ePump Enteral Feeding Sets (1 L bag with tubing)
  - 1 Kangaroo™ PEG Adapter with ENFit Connection
  - 1 nasogastric tube (proper caliber according to the patient age)

*The ePump offers two irrigation modes; continuous feeding mode allowing a maximal rate of 400 ml/h and an intermittent feeding mode with a maximal rate of 1 L/h. The desired intestinal irrigation rate in pediatrics patient is 25 ml/kg/h (max: 1.5 L to 2 L/h). The use of the different irrigation modes will be determined according to the patient weight and the associate rate.*

## 4. For the pump set-up refer to the following sections corresponding to the patient weight

**\*\*Refer to the adult protocol for patient weighing 56 kg and more\*\***

## 5. Monitoring:

- Throughout the whole bowel irrigation :
  - Monitor peristalsis
  - Monitor the absence of gastrointestinal tract obstruction (eg.: body packer with foreign body in the rectum)
  - Monitor risk of aspiration if patient is vomiting

**1. Set-Up:**

- Start the pump → Press POWER
- Press CLEAR SETTINGS if needed
- Settings of the Continuous Mode:
  - i. Press MORE
  - ii. Press CONTINUOUS OR INTERMITTENT
  - iii. Press CONTINUOUS
  - iv. Press DONE times 2
- Fill ONE enteral feeding bag with 1 L of polyethylene glycol oral solution
- LOAD A SET; load a set in the pump
  - i. Open blue door enclosing pump set loading area and refer to the figure on the pump. When the set is correctly loaded the display status will be SET LOADED
- Priming the pump:
  - i. Press PRIME PUMP → AUTO PRIME.
  - ii. Press and hold the HOLD TO PRIME FEED until drops come out
  - iii. Press DONE
- Then program the pump as follows:
  - i. Press ADJUST FEED
  - ii. Press FEED RATE → Enter the desire rate depending on the patient weight. **For example, a patient who weighs 14 kg: 25 ml x 14 kg = 350 ml/h** → Press ENTER
  - iii. Press FEED VTBD → Enter 1000 ml → Press ENTER
  - iv. Press DONE

**2. Administration Instructions:**

- Connect the purple and white tip of the feeding set to the nasogastric tube. Push until the white part of the feeding set is inserted into the nasogastric tube to prevent leakage (see: **Picture 1**)
- Press RUN to start the irrigation
- When the 1 L of the PEG solution will be completely administered, the pump will ring and stop. The time required to complete the administration of the solution will depend on the current rate. **For example, a patient who weighs 14 kg with a rate of 350 ml/h, so  $1000 \text{ ml} \div 350 \text{ ml/h} = 2.8 \text{ h}$ . Make sure to know this time limit to avoid prolonged interruption of WBI.**
- **Repeat the following steps:**
  - i. Press and hold 3 seconds the « POWER » button to shut down the pump
  - ii. Refill the enteral feeding bag with 1 L of polyethylene glycol oral solution
  - iii. Restart the pump
    1. Press POWER
    2. Press KEEP SETTINGS
    3. Prime the pump if needed (presence of air in the feeding set)
    4. Press RUN.
- Enteral Feeding Sets should be replace every 24 hours
- Dispose the Kangaroo™ Enteral Feeding Sets (bag and tubing) when treatment is discontinued

**1. Set-Up:**

- Start the pumps → Press POWER
- Press CLEAR SETTINGS if needed
- Settings of the Continuous Mode on each pump:
  - i. Press MORE
  - ii. Press CONTINUOUS OR INTERMITTENT
  - iii. Press CONTINUOUS
  - iv. Press DONE times 2
- Fill TWO enteral feeding bags with 1 L of polyethylene glycol oral solution
- LOAD A SET; load a set in each pump
  - i. Open blue door enclosing pump set loading area and refer to the figure on the pump. When the set is correctly loaded the display status will be SET LOADED
- Priming the pump:
  - i. Press PRIME PUMP → AUTO PRIME.
  - ii. Press and hold the HOLD TO PRIME FEED until drops come out
  - iii. Press DONE
- Then program the pump as follows:
  - i. Press ADJUST FEED
  - ii. Press FEED RATE → Enter half of the desired rate depending on the patient weight on each pump.  
**For example, a patient who weighs 20 kg: 25 ml x 20kg = 500 ml/h, so enter a rate of 250 ml/h on each pump to obtain a total rate of 500 ml/h** → Press ENTER
  - iii. Press FEED VTBD → Enter 1000 ml → Press ENTER
  - iv. Press DONE

**2. Administration Instructions:**

- Connect the colored tip of the ENFit Adapter to the nasogastric tube (the color of the ENFit Adapter tip varies according to the desired caliber) Push until the colored tip of the ENFit Adapter is inserted into the nasogastric tube to prevent leakage. **(see: Pictures 2-3-4)**
- Connect the 2 purple tips of the enteral feeding bag sets to the purple tips of the ENFit adapter. **(see: Picture 5)**
- Press RUN on each pump to start the irrigation.
- When the 2 L of the PEG solution will be completely administered, the pump will ring and stop. The time required to complete the administration of the solution will depend on the current rate. **For example, a patient who weighs 20 kg with a rate of 500 ml/h, so  $2000 \text{ ml} \div 500 \text{ ml/h} = 4 \text{ h}$ . Make sure to know this time limit to avoid prolonged interruption of WBI.**
- Repeat the following steps:
  - i. Press and hold 3 seconds the « POWER » button to shut down the pumps
  - ii. Refill the two enteral feeding bags with 1 L of polyethylene glycol oral solution
  - iii. Restart the pumps
    1. Press POWER
    2. Press KEEP SETTINGS
    3. Prime the feeding set if needed (presence of air)
    4. Press RUN.
- Enteral Feeding Sets should be replaced every 24 hours
- Dispose the Kangaroo™ Enteral Feeding Sets (bag and tubing) when treatment is discontinued

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**Patient weighing 35 to 40 kg: Use one pump in intermittent feeding mode (rate of 1 L/h)**

**1. Set-Up:**

- Start the pump → Press POWER
- Press CLEAR SETTINGS if needed
- Settings of the Intermittent Mode:
  - i. Press MORE
  - ii. Press CONTINUOUS OR INTERMITTENT
  - iii. Press INTERMITTENT MODE
  - iv. Press DONE 2 times
- Fill one enteral feeding bag with 1 L of polyethylene glycol oral solution
- LOAD A SET; load a set in the pump
  - i. Open blue door enclosing pump set loading area and refer to the figure on the pump. When the set is correctly loaded the display status will be SET LOADED
- Priming the pump:
  - i. Press PRIME PUMP → AUTO PRIME.
  - ii. Press and hold the HOLD TO PRIME FEED until drops come out
  - iii. Press DONE
- Then program the pump as follows:
  - i. Press ADJUST BOLUS
  - ii. Press BOLUS RATE → Press BOLUS MAX (at the bottom left) → the rate will be 999 ml/h → Press ENTER
  - iii. Press NUMBER OF BOLUSES → LET « 0 » → Press ENTER
  - iv. Press VOLUME PER BOLUS → Enter 999 mL → Press ENTER
  - v. Press BOLUS INTERVAL → Enter 4 h (minimal setting required) → Press ENTER
  - vi. Press DONE

**2. Administration Instructions:**

- Connect the purple and white tip of the feeding set to the nasogastric tube. Push until the white part of the feeding set is inserted into the nasogastric tube to prevent leakage (**see: Picture 1**)
- Press RUN to start the irrigation
- When the 1 L of the PEG solution will be completely administered, the pump will ring and stop. **The time required to complete the administration of the solution for this weight category is 60 minutes. Make sure to know this time limit to avoid prolonged interruption of WBI.**
- **Repeat the following steps:**
  - iv. Press and hold 3 seconds the « POWER » button to shut down the pump
  - v. Refill the enteral feeding bag with 1 L of polyethylene glycol oral solution
  - vi. Restart the pump
    1. Press POWER
    2. Press KEEP SETTINGS
    3. Prime the feeding set if needed (presence of air in the feeding set)
    4. Press RUN.
- Enteral Feeding Sets should be replaced every 24 hours
- Dispose the Kangaroo™ Enteral Feeding Sets (bag and tubing) when treatment is discontinued

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**Patient weighing 41 to 55 kg: Use two pumps in intermittent feeding mode (rate of 1.4 L/h)**

**1. Set-Up:**

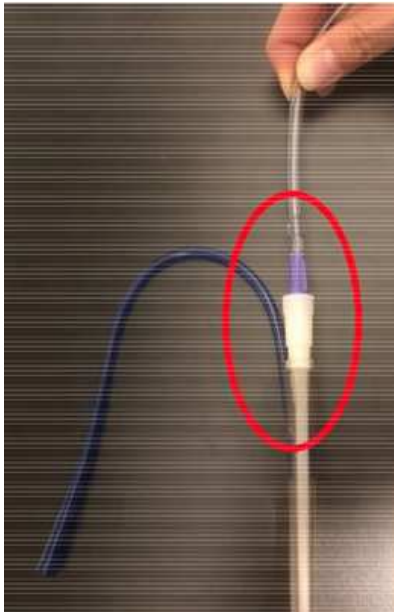
- Start the pumps → Press POWER
- Press CLEAR SETTINGS if needed
- Settings of the Intermittent Mode:
  - i. Press MORE
  - ii. Press CONTINUOUS OR INTERMITTENT
  - iii. Press INTERMITTENT MODE
  - iv. Press DONE 2 times
- Fill two enteral feeding bag with 1 L of polyethylene glycol oral solution
- LOAD A SET; load a set in the pumps
  - i. Open blue door enclosing pump set loading area and refer to the figure on the pump. When the set is correctly loaded the display status will be SET LOADED
- Priming the pump:
  - i. Press PRIME PUMP → AUTO PRIME.
  - ii. Press and hold the HOLD TO PRIME FEED until drops come out
  - iii. Press DONE
- Then program the pump # 1 as follows:
  - i. Press ADJUST BOLUS
  - ii. Press BOLUS RATE → Press BOLUS MAX (at the bottom left) → the rate will be 999 ml/h → Press ENTER
  - iii. Press NUMBER OF BOLUSES → LET « 0 » → Press ENTER
  - iv. Press VOLUME PER BOLUS → Enter 999 mL → Press ENTER
  - v. Press BOLUS INTERVAL → Enter 4 h (minimal setting required) → Press ENTER
  - vi. Press DONE
- Then program the pump # 2 as follows:
  - i. Press ADJUST BOLUS
  - ii. Press BOLUS RATE → Enter 400 ml → Press ENTER
  - iii. Press NUMBER OF BOLUSES → LET “0” → Press ENTER
  - iv. Press VOLUME PER BOLUS → Enter 400 mL → Press ENTER
  - v. Press BOLUS INTERVAL → Enter 4 h (minimal setting required) → Press ENTER
  - vi. Press DONE

**2. Administration Instructions:**

- Connect the colored tip of the ENFit Adapter to the nasogastric tube (the color of the ENFit Adapter tip varies according to the desired caliber). Push until the colored tip of the ENFit Adapter is inserted into the nasogastric tube to prevent leakage. **(see: Pictures 2-3-4)**
- Connect the 2 purple tips of the enteral feeding bag sets to the purple tips of the ENFit adapter. **(see: Picture 5)**
- Press RUN on each pump to start the irrigation. Wait 5 seconds and press RUN on the second pump, this way there will be a more continuous flow.
- When the 1.4 L of the PEG solution will be completely administered, the pump will ring and stop. **The time required to complete the administration of 1.4 L of the solution programmed for this weight category is 60 minutes. Make sure to know this time limit to avoid prolonged interruption of WBI.**
- Repeat the following steps:
  - i. Press and hold 3 seconds the « POWER » button to shut down the pumps

- ii. Refill the two enteral feeding bags with 1 L of polyethylene glycol oral solution
- iii. Restart the pumps
  1. Press POWER
  2. Press KEEP SETTINGS
  3. Prime the feeding set if needed (presence of air)
  4. Press RUN. Again, wait 5 seconds between each pump
- Enteral Feeding Sets should be replaced every 24 hours
- Dispose the Kangaroo™ Enteral Feeding Sets (bag and tubing) when treatment is discontinued

**Picture 1**



**Picture 2**



**Picture 3**



**Picture 4**



**Picture 5**

