

Dosing, Preparation and Administration

Each box of DOLFIN supplement contains one hundred 13g sachets of powder supplement (either treatment supplement or control supplement). 1g scoops to measure the supplement and clips to close the sachets are also provided. The scoops and sachets are not single use; please do not throw them away.

Powder supplement should be added daily to the infant's usual milk feed (breast or formula). Infants should start supplement as soon as they have reached full milk feeds (approx. 120–150ml/kg/day) as per local feeding practices, unless there is clinical indication not to do so.

The definition of 'full milk feeds' will vary slightly between NNUs and infants, but in term infants these are typically around 120ml/kg/day whilst in preterm infants they are around 150ml/kg/day, or when parenteral nutrition is no longer considered necessary (exact timing is at the discretion of the clinical consultant managing their care).

The DOLFIN supplement is most soluble in milk. Although the supplement can be mixed in sterile water, the resulting solution is less homogeneous and so less preferable as a means of regularly giving the supplement. This option should not be offered routinely.

If the milk is warmed, ensure it is warm but not hot before supplement is added (water should be boiled and cooled before mixing). Curdling may occur if the temperature of the milk is greater than 37 degrees Celsius.

The total daily supplement dose can be given with one feed, or split across more than one feed depending on infant feed volumes and preference. This allows the smallest babies to start supplementation as early as possible and can support breastfeeding families (see below for further information on dosing and preparation for babies less than 1kg).

There are no contraindicated medications or dietary supplements, and infants will be able to have all medicines and supplements normally prescribed for this population during the trial.

The DOLFIN supplement can only be given via an **oral or gastric route (i.e. oral, nasogastric or gastrostomy tube) and must not be given via a jejunal route. If an infant starts jejunal feeds after starting supplement, supplement should be paused and restarted when the infant is no longer on jejunal feeds.** If a baby receiving jejunal feeds can tolerate the supplement given via a gastric route, then supplementation can continue using a gastric route. In these circumstances the supplement can be prepared as a shot and given via the gastric route. See p.4 for further guidance on preparing the supplement as a shot.

Supplement can be administered by the local clinical team or by the parents, according to local policy and preference, after parent training has taken place. Any member of the local clinical team who would usually give feeds can administer the supplement. They do not need to be listed on the DOLFIN Site Delegation Log to do so.

The supplement can be given with a feed e.g. using a bottle or via nasogastric tube or gastrostomy, or given ahead of feed as a supplement 'shot'. The smaller milk volumes required for a supplement 'shot' allows smaller babies to commence supplement earlier and may be the preferred method of supplementation for breastfeeding babies.

Opened sachets must be discarded after 24 hours and a new sachet used. When measuring out scoops of supplement, excess supplement should not be put back in the sachet and should be thrown away. Clips can be used to close opened sachets; these are not single use and should not be thrown away. Once the supplement has been added to the infant's milk, it should be given as soon as possible and within 1 hour of preparation. After 1 hour, any unused feed containing supplement should be discarded. For continuous feeds given via a closed system in hospital, the supplement can be used over a period of more than 1 hour, as per use of infant formula milks given continuously.

The amount of powder supplement required is 1 gram per 1 kilogram of body weight i.e. 1 level scoop per whole kg infant weight. For example, an infant weighing 3.0 –3.9kg will receive three scoops daily. This increases throughout the duration of the trial to a maximum of 12g, so no infant would have more than 12g of supplement a day, even if their weight goes over 12kg.

Each 1g of powder supplement needs to be accompanied by a total feed volume of at least 15ml milk to ensure appropriate osmolality. For example, a 3kg infant having 3 scoops will need to have a total feed volume of at least 45mls. If the supplement is given as a supplement shot each 1g of supplement should be mixed with at least 3ml of milk, followed by the infant's usual feed so that the total volume of feed given is 15ml per gram of supplement (see below for further information on dosing and preparation for babies less than 1kg).

Any supplement given by clinical staff, at the recruiting site or Continuing Care Site should be recorded on the **DOLFIN NNU Daily Dosing Log**. If parents administer the supplement whilst the infant is in hospital, parents can use the study app to report supplementation (see **Guidance Sheet 5 – Parent Training**). Clinical staff may also wish to record that parents have given the supplement according to local practices e.g. in infant's medical notes. See **Guidance Sheet 6 – Data Collection** for further information on recording supplementation and data collection forms.

The supplement will be continued at home by parents post-discharge and continued to 12 months post EDD. Once the infant is receiving solid foods the supplement powder can be added to their normal weaning foods, or it can continue to be added to a milk feed.

If an infant temporarily pauses supplement, supplementation should restart as soon as possible. Infants do not need to discontinue supplement or be withdrawn due to pauses in supplementation. Temporary pauses should be recorded on the **DOLFIN NNU Daily Dosing Log** (see **Guidance Sheet 6 – Data Collection**). Sites should contact the DOLFIN study team if they have any concerns.

This project was funded by the National Institute for Health and Care Research Health Technology Assessment (HTA) Programme. (Project number NIHR 130925).

Guidance on supplementation can be found in **DOLFIN Parent Information for Supplement Use Leaflet**. Parents should be trained in supplementation prior to administering it themselves and be provided with relevant documents and resources for post-discharge (See **Guidance Sheet 5 – Parent Training**). Parents should be provided with information on who to contact with trial related queries. Breastfeeding mothers should be provided with options for delivering the supplement and signposted to DOLFIN breastfeeding materials and should be supported by local lactation consultants as per usual care

Making up the supplement to be given with a feed (by bottle or via nasogastric tube or gastrostomy)

You will need:

- Milk
- A sachet of supplement
- Scissors (to cut sachet top)
- A bottle with lid and/or teat
- Two scoops (one to measure, one to level scoop)
- If infant is fed by nasogastric or gastrostomy tube you will also need the relevant connector lid

Prepare your child's milk as usual. You need a minimum milk volume of 15ml for every 1g of supplement.

Gently tap the bottom of the sachet on a hard surface to make sure the powder falls to the bottom of the sachet.

Use the 1g scoop to measure the right amount of supplement. Make sure that the scoops are level by using the handle of the second scoop to scrape off the excess supplement. Excess supplement should not be put back in the sachet and should be thrown away. Add the powder supplement to the bottle. Put the teat or lid on top of the bottle and shake the bottle until all the supplement has been dissolved. If the supplement does not dissolve fully when added to the milk, add the supplement to the empty milk bottle and use the back of the scoop to gently break up the supplement before adding the milk.

The supplement feed can now be administered using the usual feeding route.

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Making up the supplement to be given before a feed as a supplement 'shot'

You will need:

- Milk
- A sachet of supplement
- Scissors (to cut sachet top)
- A mixing container e.g. gallipot
- 5ml Syringe
- Two 1g scoops (one to measure, one to level scoop)

Infants can be given a supplement shot immediately before their usual feed. When making up a supplement shot, each 1g of supplement should be mixed with a minimum of 3ml of milk.

Prepare the milk (or sterile water) as usual.

Gently tap the bottom of the sachet on a hard surface to make sure the powder falls to the bottom of the sachet.

Use the 1g scoop to measure the right amount of supplement. Make sure that the scoops are level by using the handle of the second scoop to scrape off the excess supplement, which should be thrown away. Excess supplement should not be put back in the sachet and should be thrown away.

Add the powder supplement to the mixing container before any milk. Use the back of the scoop to break up the supplement into loose powder. Draw the correct amount of milk (3ml for every 1g of powder supplement) into the syringe, then add this to the supplement in the mixing container.

Mix for 10-20 seconds, using the syringe tip to gently break down any supplement lumps.

Now use the syringe to draw up all the milk containing the supplement. The volume in the syringe will be a little more than the volume of milk you added.

The supplement shot can now be administered using the preferred method. The infant should then be given their usual feed so that the total feed volume is at least 15 ml (the 3ml supplement shot counts towards the total feed volume).

Trial specific videos demonstrating supplement administration can be found on the Parent pages on the DOLFIN website <https://www.npeu.ox.ac.uk/dolphin/> alongside other documents and resources which sites and parents can refer to for guidance.

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Supplement Dosing for babies weighing less than 1kg

Infants weighing < 1kg will receive a proportionate amount of supplement based on two weight bands: 0.5-0.74kg (0.5g supplement) and 0.75-0.99kg (0.75g).

The daily dose of supplement can be split across feeds to allow the smallest babies to start supplementation as early as possible.

0.5g of supplement needs to be accompanied by a total minimum feed volume of 7.5ml of milk and 0.75g accompanied by 11ml of milk.

If splitting the total daily dose of supplement into more than one feed, then each 0.25g of supplement needs to be accompanied by 3.8 ml of milk.

The volume of milk given with the supplement counts towards the minimum required accompanying milk volume.

Infants weighing less than 1kg should be dosed as follows:

- 0.5kg -0.749kg, make up as for 1g/3ml and discard half
- 0.75-0.99kg, make up as for 1g/3ml and discard one quarter
- The daily dose of supplement can be split across feeds to allow the smallest babies to start supplementation as early as possible.
- If splitting the total daily dose of supplement into more than one feed, then each 0.25g of supplement needs to be accompanied by 3.8mls feed.

For babies receiving hourly feeds, the supplement can be added to the volume required for two feeds (adhering to minimum volume guidance), and the volume divided into two i.e. half of the supplement is given in the first feed, and the remainder is given one hour later.

Unused milk containing supplement should be discarded after 1 hour and should not be given.

Making up less than 1g of supplement:

Mix 1g with 3ml milk using the method described for making up a supplement shot. Once mixed, the total volume will be a little more than 3ml, as the supplement causes a variable amount of displacement depending upon the milk used.

Discard the appropriate amount of milk so that the baby will only receive the intended dose of supplement:

- to give 0.25g supplement discard three quarters of the volume, and give the remainder
- to give 0.5g supplement discard half the volume and give the remainder
- to give 0.75g supplement discard one quarter of the volume and give the remainder.

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The volume of milk given with the supplement counts towards the minimum required accompanying feed volume.

Dosing examples:

- 1.2kg baby on 2 hourly feeds of 150mls/kg/day (180mls @ 15ml per feed):
 - Dose = 1g in 15mls milk (min. volume)
 - Add 1g of supplement to 15mls milk.

- 900g baby on 2 hourly feeds of 150mls/kg/day (135mls @ 11.2ml per feed):
 - Dose = 0.75g with a minimum milk feed volume of 11mls
 - Add 1g of supplement to 3mls milk; discard one quarter
 - Add the supplement mix to milk feed to make up to 11.2ml
 - If preferred, give the supplement mix as a supplement shot and then top up with remaining feed volume

Splitting doses:

- 600g baby on hourly feeds 150mls/kg/day (90 mls per day = 3.8mls per feed):
 - Daily supplement dose is 0.5g
 - Add 1g supplement to 3mls of milk
 - Discard half
 - Add the supplement mix to feed to make up 7.6ml (for 2 feeds).
 - Give 3.8ml for the first feed and store the remaining 3.8ml for the next feed to be given an hour later.

Unused milk containing supplement should be discarded after 1 hour and should not be given.

If an infant does not finish a feed

If an infant does not finish the whole feed, they will not have received the full amount of supplement. The amount of supplement the infant missed should be given with a different feed later in the day.

If an infant vomits a feed don't try to give more supplement to replace that 'lost' due to vomiting. It may be appropriate to consider splitting the total daily supplement dose across more than one feed to help reduce the amount lost through vomiting.

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