

Hand Expression Breast Model



UK BABY FRIENDLY INITIATIVE

Developed in collaboration with
the UK Baby Friendly Initiative.
£50 from the sale of each model
will be donated to Baby Friendly
Initiative projects supported
by UNICEF UK.

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Health & Safety

- The synthetic soft tissue in this model is made from natural foam latex; persons allergic to latex should wear surgical gloves.
- Do not ingest simulated milk; practise normal hygiene after handling the product.

Product Care

- Latex foam is a natural product; store away from strong light and in an airtight bag to reduce exposure to ozone. Ozone is generated by some electrical equipment including telephones and computers.
- Wash your hands before touching the foam; if the foam is handled after contact with certain metals such as copper (including coins), it becomes yellow and discoloured.
- The foam may be washed effectively using any soap, and then rinsed afterwards. 'Vanish'™ soap is very effective.

Introduction

It is recommended that all breastfeeding mothers be taught how to express their milk by hand. This enables them to become familiar with the structure and function of their breasts and provides them with a 'first aid' measure in the event of breastfeeding complications. It also equips them with a means of expressing milk in a situation where their baby cannot breastfeed directly.

The breast model has been designed to simulate the expression of breastmilk by hand from the natural female breast. Its purpose is as a teaching and learning tool for health care workers, ~~not mothers~~. Mothers should ideally be taught the technique using their own hands on their own breasts. The breast model should, at all times, be handled gently, as would be the case in a real situation.

How hand expression works

The technique of hand expression mimics what happens during a breastfeed. There are two distinct parts to this process:

- 1 ~~The oxytocin reflex~~ (also known as the milk ejection, or let-down, reflex).
This is the response of the mother's body to the presence of her baby. Oxytocin acts on the muscles surrounding the alveoli and lactiferous ducts to propel milk towards the nipple. In some (but not all) women, this results in dripping or spurting of milk from the nipple.
- 2 ~~Compression of the lactiferous sinuses~~
The baby uses his tongue to compress the lactiferous sinuses against his palate. This results in the vigorous expulsion of milk into his mouth.

It is important that students understand that hand expression is most effective when both the above elements are brought into play.

Stimulating the oxytocin reflex

The oxytocin reflex can be stimulated by anything which reminds the mother of her baby and by gentle massage of the breast. Massage is best applied by the mother herself or by her partner. It should be light and feel pleasant to the mother. ~~Note that the purpose of massage is NOT to force milk down the ducts but to stimulate the release of oxytocin.~~

Compressing the lactiferous sinuses

In hand expression, compression of the lactiferous sinuses is usually achieved most effectively using the thumb and finger(s) of one hand. This, too, should normally be carried out by the mother herself.

The model can be used to demonstrate both these techniques. Users should note, however, that while compression of the lactiferous sinuses can be mimicked exactly – and will produce milk – massage will not result in the appearance of milk. If it does, this indicates that the massage is too vigorous.

Structure of the model

The model is equipped with four ‘milk’ reservoirs, located behind the nipple/areola area. These mimic the 15 to 20 lactiferous sinuses of the normal breast. The four reservoirs are positioned in a north-south-east-west configuration. When two opposing reservoirs are compressed, ‘milk’ is expelled via the nipple.

Expressing ‘milk’ using the model

The method of expressing milk from the model is intended to mimic the real situation as closely as possible. This includes the opportunity to stand behind or beside the model so that you are in the same position as a mother expressing her own breasts. ~~Whenever possible, health care workers should aim to teach hand expression without handling the mother’s breast.~~ On the rare occasion when you need to demonstrate the technique to a mother using your own hand on her breast, standing behind or beside her will enable you to explain things from her perspective.

- 1 Stand or sit with the model on your lap or on a table in front of you, pulled close, with the breast facing outwards.
- 2 Cup one hand under the breast.
- 3 Gently palpate the breast, using the pads of the thumb and forefinger, to locate the milk reservoirs (lactiferous sinuses). They will feel slightly lumpier than the surrounding tissue.
- 4 With thumb and forefinger (or thumb and first two fingers) opposite each other over the reservoirs (either north-south or east-west), apply gentle pressure backwards and bring thumb and finger(s) together to compress the reservoirs. (It may be helpful to accompany this with a slight forwards movement towards the nipple, so that the action is a scooping one.)
- 5 Release the pressure and repeat action 4, developing a comfortable rhythm.

Note that the fingers should remain in the same position on the breast throughout the movement. Sliding the fingers along the breast or dragging the skin is ineffective and can damage the delicate breast tissue.

After a few repetitions, rotate the fingers and thumb 90° around the areola and repeat the expression. This allows milk to be expressed from the other pair of reservoirs. (Note: Mothers expressing their own breast should be encouraged to rotate the position of their hand by varying degrees to ensure access to all lactiferous sinuses and thus achieve equal drainage of all lobes. If they wish to drain the breast fully, they should be advised to reposition their hand when the flow from one area subsides.)

Storage

The product should be stored at room temperature (between 12 to 24 degrees C). If the model has been stored in a cold room then allow 1 hour for the model to come up to room temperature first.

Replaceable items:



Simulated breast milk
L&T order code: **40104**



Cleaning pump
L&T order code: **40105**

Packing/unpacking the model

1



Starting with the shortest side, remove the clear back plate.

Remove the black plastic seal from the lid of the bottle of simulated milk. The air hole can now be seen.

Refit the back plate.

The air hole should be unobstructed at all times. Blocking it will cause poor performance of the fluid delivery system.

2



Remove and keep the foam and other packaging materials from the front of the breast.

Having unpacked the model after transit it is advisable to check that the fluid system is working properly.

Refer to page 7: **Priming the fluid system.**

Changing the bottle of simulated milk

1



Starting with the shortest side, remove the clear back plate.

2



Remove the bottle of simulated milk.

The bottle is held in place by 2 velcro tabs: one on the side of the bottle and one on the base.

Pull the bottle away from the back of the model first and then lift away from the base.

3



Turn the bottle, NOT the lid, and unscrew it from the lid assembly.

Do not turn the lid assembly as this can twist and kink the fluid system.

4



Withdraw the lid assembly from the empty bottle.

Now remove the lid from the new bottle and screw it into the lid assembly.

Refit the bottle.

Refit the back plate.

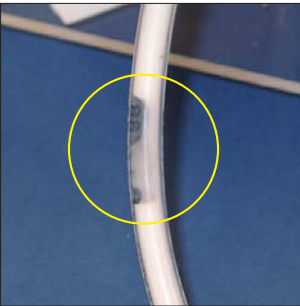
5

The model now needs priming before it can be properly used.

Refer to page 7: **Priming the fluid sytem.**

Priming the fluid system

1



The fluid system needs priming to ensure that any trapped air is expelled.

Air can be seen as a gap inside the fluid system.

2



Place a container underneath the nipple to catch any milk expelled during the priming process.

Express milk from the ducts until the trapped air is expelled. Take care to repeat this process with the ducts in the north/south orientation on the breast, as well as those placed east/west.

Check that the milk is flowing smoothly through the fluid system.

3

Leave the container under the nipple as, after priming, pressure will have built up within the fluid system. This causes milk to slowly flow out of the nipple, this is normal.

The model is ready to use after 30 minutes or when the nipple stops dripping.

Allowing the model to 'rest' is important as otherwise milk can be expressed through improper breast expression technique.

Cleaning the fluid system

1



If the model has not been used for some time simulated milk can dry in the nipple. Remove it by expressing milk in the normal manner.

It is advisable to flush the fluid system through every 6 months. Alternatively, if milk is not expressing properly, even after priming the system, there may be a blockage which needs removing.

Always set the model up on a waterproof wipe-clean work surface before cleaning.

Starting with the shortest side, remove the clear back plate.

Remove the bottle of simulated milk.

The bottle is held in place by 2 velcro tabs: one on the side of the bottle and one on the base.

Pull the bottle away from the back of the model first and then lift away from the base.

2



Place a container under the nipple as fluid will be expelled from it during cleaning.

3



Disconnect the fluid system from the lid assembly by depressing the metal clip on the connector.

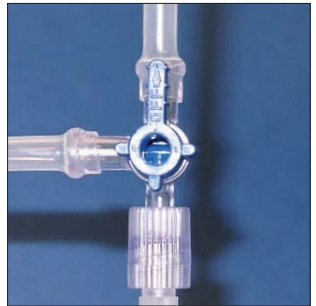
4



Connect the cleaning pump to the fluid system.

The connector clicks when securely attached.

5



Place the pump filler tube into a container of water.

Rotate the blue valve to match the picture. The long blue OFF arm points towards the fluid system on the model.

6

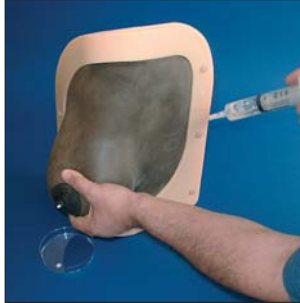


Draw up approximately 40ml of water.

If the pump does not fill up check the alignment of the valve.

Now rotate the valve 90° anticlockwise. The long OFF arm points towards the filler tube.

7



Slowly depress the plunger and inject the fluid system with water.

To ensure the breast ducts are cleared the breast should be repeatedly squeezed whilst injecting water.

Repeat stages 5 to 7 as required until all the simulated milk is removed and the fluid system is clear.

8



The fluid system now needs filling with simulated milk.

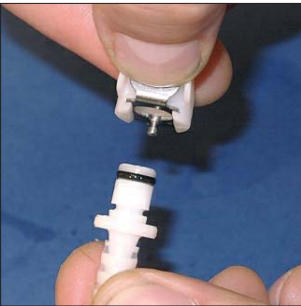
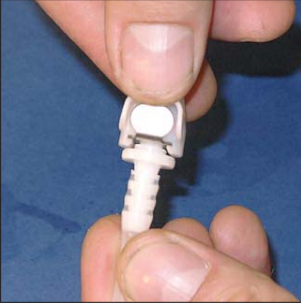
Remove the pump filler tube from the water.

Dry the tube.

Put the pump filler tube into the bottle of simulated milk and copy stages 5 to 7 until only milk appears from the nipple.

Remove the pump tube from the bottle of simulated milk.

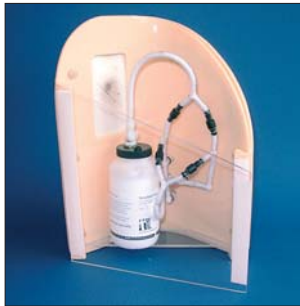
9



Disconnect the pump from the end of the fluid system.

The connector is spring loaded to aid removal.

10



Replace the lid on the bottle of simulated milk and reconnect it to the fluid system. The connector clicks when securely attached.

Refit the bottle to the back of the model.

Refit the clear back plate.

Flush the pump through with water before storing it.

11

Leave the container under the nipple as, after priming, pressure will have built up within the fluid system. This causes milk to slowly flow out of the nipple, this is normal.

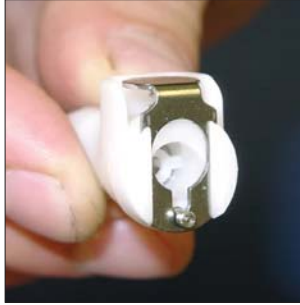
The model is ready to use after 30 minutes or when the nipple stops dripping.

Allowing the model to 'rest' is important as otherwise milk can be expressed through improper breast expression technique.

Troubleshooting

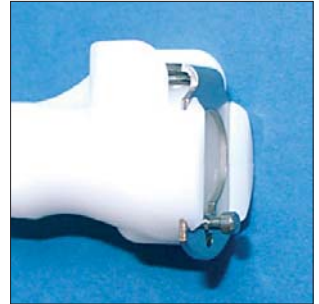
Should the fluid system connector fail to attach to the lid assembly or the cleaning pump the connector mechanism might need 'resetting'.

1



Connector in the locked position, preventing items from being attached to it.

2



Unlock the connector by depressing the metal clip.

The connector is reset and ready to use when the pin pops out.



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