Nasco HEALTHCARE

Simulaids Life/form

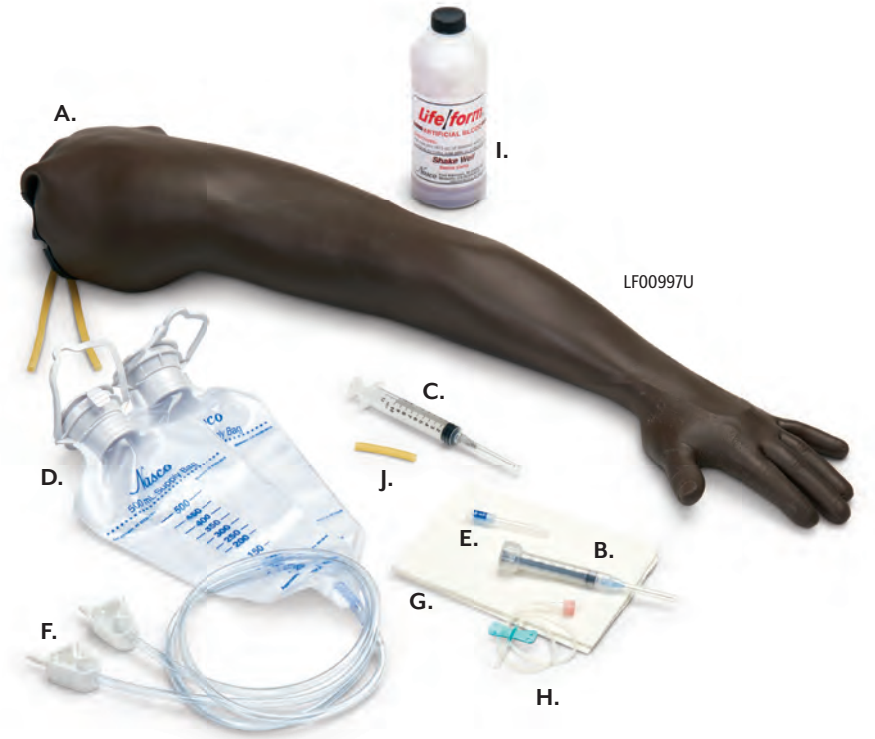
# Venipuncture and Injection Training Arm

LF00698U (Light), LF01252U (Medium), LF00997U (Dark)

## INSTRUCTION MANUAL


**WARNING:** Products may contain dry natural rubber.

**5-Year Warranty**




## ABOUT THE SIMULATOR

The ***Life/form***® Venipuncture and Injection Training Arm Simulator will provide years of trouble-free usage, the skin and veins can be readily replaced when needed. The life of the replaceable skin and veins will be prolonged by utilizing smaller needle sizes (such as 20- to 25-gauge). However, if instruction with larger needle sizes is required, this can be done; the skin and veins will merely need to be replaced sooner. The Skin and Vein Kits are available through Nasco (see page 9 for list of supplies).

## LIST OF COMPONENTS

- **A.** Adult Venipuncture and Injection Training Arm
- **B.** 3 cc Syringe with Needle
- **C.** 12 cc Syringe with Needle
- **D.** 2 Fluid Supply Bags
- **E.** 22-gauge Needle
- **F.** Pinch Clamp
- **G.** 2 White Towelettes
- **H.** Butterfly Infusion Set
- **I.** Pint Bottle with Blood Powder
- **J.** Tubing
- **K.** Soft Carry Case (Not Pictured)
- **L.** Five-Year Warranty Card (Not Pictured)

Figure 1

Figure 2

## INTERNAL STRUCTURE

Internally, the vascular structure (rubber tubing) begins at the shoulder and continues under the arm, crosses the antecubital fossa forearm, makes a loop in the back of the hand, and then returns to the underarm. This venous system is constructed of special plastic tubing, with the lumen being the approximate size of a human vein. *(See figures 1 & 2.)*


Figure 3

## GENERAL INSTRUCTIONS FOR USE

**A. Pressurizing the Veins with Synthetic Blood:**

1. Add 1 pint of distilled water to the pint bottle with blood powder; shake it to mix. (See figure 3.)

Actual product may vary slightly from photo. Nasco reserves the right to change product color, materials, supplies, or function as needed.

Figure 4


Figure 5

2. Be sure the clamp on the fluid supply bag tubing is closed, fill it with the blood and hang the bag no more than 18" above the level of the arm. *(See Figure 4.)* (Fluid Supply Stand shown sold separately.)
3. Attach the fitting end of the filled, hanging fluid supply bag tubing to one of the shoulder tubes. (Make sure the arm is palm down at this point.)
   **Note:** Connecting the fluid supply bag to the shoulder tube may require a small amount of water soluble lubricant, heating the shoulder tube end in the palm of a warm hand, or dipping the shoulder tube end into warm water.
4. With the other shoulder tube attached to the second (empty) fluid supply bag, gradually flush the vascular system with synthetic blood by slowly opening the clamp on the hanging fluid supply bag. (The pinch clamp on the empty fluid supply bag should be open.) Allow blood to pass through the system until the air bubbles have been eliminated. *(See Figure 5.)*
5. Close the clamp on the hanging bag and then turn the arm over so it is palm up. Slowly open the clamp on bag to allow some blood to pass through and to remove any remaining air that is trapped in the system.
   **Note:** It may be necessary to swap the positions of the fluid supply bags during the filling process in order to prevent bubbles in the tubing. If the hanging bag runs out of blood before the arm is fully prepped, simply remove it from its hanging position and replace it with full bag.

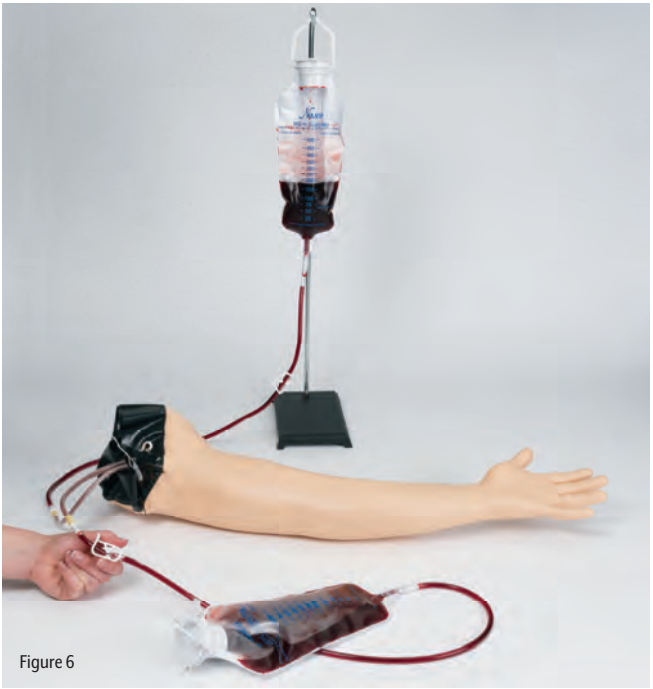


Figure 6

6. Once the system is filled, close the clamp on (resting) fluid supply bag and leave (hanging) fluid supply bag clamp open. The arm is now fully pressurized and can be used palm up or down. *(See figure 6.)*

Figure 7

**B. IV Injection and Withdrawal**

1. Start with a fully pressurized arm. See procedure A under General Instructions for Use.
2. Close the clamp on the resting fluid supply bag.
3. Open the clamp on the hanging fluid supply bag.

   The arm is now ready to perform injections or withdrawals along any of the 8 fluid lines present in the arm. Nasco recommends the use of small diameter needles for these procedures; 20- to 25-gauge. Use only distilled water to prep the injection sites and as an injection. A realistic flashback will occur when the vein has been properly punctured. *(See Figure 7.)*


Figure 8

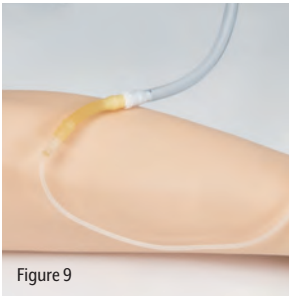


Figure 9

**C. Intravenous Infusions**

1. Begin with a fully pressurized arm. See procedure A under General Instructions for Use.
2. Select the appropriate intravenous infusion needles or butterfly included. Nasco recommends small gauge needles (20- to 25-gauge).
3. Make sure the arm is palm down and the clamps on both fluid supply bags are closed.
4. Simulate cleansing the injection site with distilled water.
5. Insert the IV needle or butterfly into a vein. Flashback will indicate proper insertion. *(See Figure 8.)*
6. Attach the needle or butterfly to the tubing from the infusion solution (not supplied) or a third fluid supply bag (sold separately) with the latex adapter if needed. *(See Figure 9.)*
7. Open the clamp on the resting fluid supply bag.

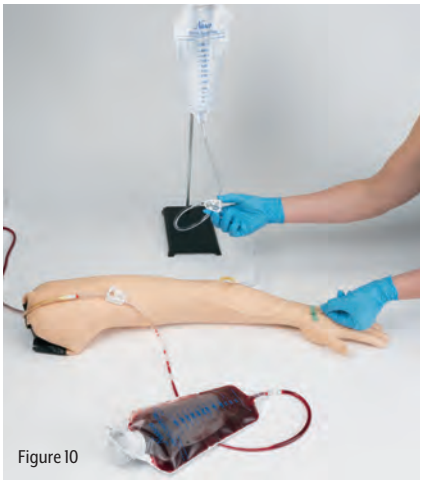


Figure 10

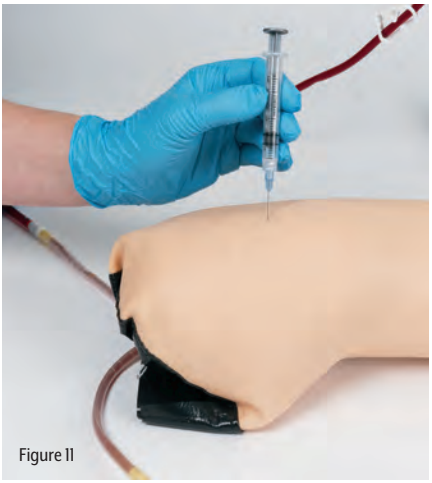


Figure 11

8. Open the clamp on the infusion solution or the third fluid supply bag. Proof of proper procedure will be evidenced by the flow of fluid from the infusion solution or the third fluid supply bag. *(See Figure 10)*
   **Note:** This procedure may dilute your simulated blood solution.

**D. Intramuscular Injections**

The procedure for administering intramuscular injections can be practiced in the area of the deltoid. *(See Figure 11.)* Prep the site with distilled water only. Injections can be done utilizing the appropriate needle and syringe. ½ cc of distilled water may be injected, however, we **recommend** utilizing air as injectant since the distilled water cannot be drained, but must evaporate from the arm. Synthetic blood must NEVER be used for injections.

## CARE AND MAINTENANCE

The Adult Venipuncture Injection and Training Arm should be completely drained of fluid and dry after each use. Simulated blood can be reused.

**A. Draining and Rinsing the Simulator**

1. Disconnect the fluid supply bags and drain simulated blood into the supplied pint bottle.
2. Fill one bag with water and reconnect to a shoulder tube.
3. Reconnect the other rinsed fluid supply bag to the open shoulder tube.
4. Open both clamps and allow the system to flush.
5. Repeat with clean water until the water runs clear from the arm.
6. Drain the fluid supply bags and leave the caps open to allow the inside to air dry as much as possible.
7. Excess water may be removed from the arm by raising the hand, lowering the shoulder, and draining it into a sink or basin.
8. Remove the clamps from the fluid supply bag tubing as they can cause permanent kinks and restrict fluid flow.

**B. Cleaning the Simulator**

1. Wash the outside of the arm with mild liquid detergent and water.
2. Stubborn stains may be removed using Nasco Cleaner (LF09919U, sold separately). Simply dispense the Nasco Cleaner to the stained area and wipe clean with a soft cloth or paper towel.

**C. Maintaining the Simulator**

1. Nasco Vein Tubing Sealant Kit (LF01099U) will extend the useful life of the tubing. **Note:** Nasco Vein Tubing Sealant cannot be shipped outside of the United States.
2. Vyna Bond, purchased separately (see Supplies and Replacement Parts), can be applied to the skin to repair puncture sites.

## CAUTIONS

1. This synthetic blood is specially formulated to be compatible with the self-sealing veins and plastics used in manufacturing the arm.
2. NEVER use synthetic blood for intramuscular injection.
3. DO NOT use dull or burred needles, as these will cause leaks in the system. Burred needles will cause permanent damage. **Use smaller needles** (20- to 25-gauge).
4. DO NOT allow "blood" to dry on simulator — it may stain the skin.
5. Use only 500 cc of infusion fluid, as a larger amount will also increase the pressure of the venous system, resulting in leaks.
6. DO NOT clean the simulator with solvents or corrosive material as they will damage it.
7. Newsprint, similar printed paper, or plastic will permanently stain the simulator if prolonged contact occurs.

## TROUBLESHOOTING

**PROBLEM: Cannot get blood to flow or flashback.**
If you are unable to get blood flow through your IV Arm, there is most likely a restriction somewhere within the system. Restrictions can be caused by air bubbles, kinks (either in the veins or supply and drain tubing), or dried blood within the system.

1. Check for kinks in the tubing of the fluid supply bags: If a clamp has been located in one spot of the tube for a long period of time, the tube can become kinked, restricting flow even when the clamp is open. Massage the tube where the clamps have been to open the tubing again. Change positions of clamps often to keep this from reoccurring.
2. Fluid supply bag height: Is the supply bag hung at the appropriate height according to the instruction manual? Hanging the supply bags slightly higher for the arms that are not producing enough pressure can create just enough gravity on the fluid to facilitate flow.
3. Check for air bubbles: Make sure you purge the arm of air bubbles. Gradually "flush" the system with synthetic blood by slowly opening the supply clamp. Allow some blood to pass through the system until the air bubbles have been eliminated in the drain bag. Close the clamp on the supply bag and then turn the arm over so it is palm up. Slowly open the clamp to allow some blood to pass through and to remove any remaining air that is trapped in the system.
4. Dried blood left in veins from previous uses: If these are veins that have been used before, you could try running a couple of bags of clear warm water through them. There may be some sediment from previous uses lodged within the veins/tubing.
5. Check vein tubing for kinks: Following a skin/vein replacement, it is possible that a vein rolled out of the track or there may also be a slight kink in the tubing. This is most likely in the underside of the fingers. Flexing the fingers will sometimes work out the kink. Try massaging the area of the arm (thumb and fingers) to relocate the vein back within the track of the arm core. Also, make sure you haven't pulled the skin on too tight, causing a restriction. Skins should be loose fitting, especially around the thumb and finger areas. Apply lubrication to help move the veins back into place.

## SUPPLIES AND REPLACEMENT PARTS

**LF00845U** ***Life/form***® Blood, 1 quart
**LF00846U** ***Life/form***® Blood, 1 gallon
**LF00966U** Light Skin & Vein Replacement Kit
**LF00987U** Dark Skin & Vein Replacement Kit
**LF00996U** Vyna Bond
**LF01022U** Fluid Supply Stand
**LF01099U** Vein Tubing Sealant Kit
**LF01104U** ***Life/form***® IV Arm Skin & Vein Replacement DVD — FREE
**LF01105U** ***Life/form***® IV Arm Set-Up & Troubleshooting DVD — FREE
**LF01055U** Vein Replacement Kit
**LF01130U** Fluid Supply Bag
**LF09919U** Nasco Cleaner

## *Other Available Life/form Simulators*

LF00706U

| | |
|---|---|
| **LF00698U** | Adult Venipuncture and Injection Training Arm, Light |
| **LF00700U** | Portable IV Hand, Adult, Light |
| **LF00701U** | Portable IV Arm, Light |
| **LF00704U** | Portable IV Arm, Dark |
| **LF00703U** | Portable IV Hand, Adult, Dark |
| **LF00706U** | Complete IV Arm and Pump Set |
| **LF00952U** | Injection Training Model, Light |
| **LF00953U** | Injection Training Model, Dark |
| **LF00958U** | Pediatric IV Arm |
| **LF00961U** | Intramuscular Injection Simulator |
| **LF00995U** | Arterial Puncture Arm |
| **LF00997U** | Adult Venipuncture and Injection Training Arm, Dark |
| **LF01007U** | IV Foot |
| **LF01008U** | Intradermal Injection Simulator |
| **LF01139U** | Advanced IV Hand, Light |
| **LF01146U** | Advanced IV Hand, Dark |
| **LF01162U** | Vebatech IV Trainer, Light |
| **LF01163U** | Vebatech IV Trainer, Dark |
| **LF01184U** | Venatech IM & SubQ Simulator, Light |
| **LF01185U** | Venatech IM & SubQ Simulator, Dark |
| **LF03637U** | Infant IV Arm |
| **LF03636U** | Infant IV Leg |

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