

NASG INTRODUCTION



Introduction to the Non-Pneumatic Anti-Shock
Garment (NASG) for Obstetric Haemorrhage

DISCLAIMER: We highly recommend using the training materials as part of a hands-on training program led by an experienced trainer with NASG expertise. Neither UCSF, nor any of its employees, makes any warranty, express or implied, including warranties of merchantability and fitness for a particular purpose, or assumes any responsibility for the accuracy, completeness, or usefulness of any information from this website or from any websites referenced by this website. **Any use of this document is an agreement that you have read, understood, and accept the terms above.**



INTRODUCTION

This unit is designed for trainees at the community level to obtain a very basic introduction to obstetric haemorrhage, what the Non-pneumatic Anti-Shock Garment (NASG) is, and how the NASG works. As the trainer, you may want to review national or local treatment guidelines and use that information to supplement this material. We recommend you consult national or local guidelines to determine if there are specific levels used for diagnosing shock – for example, a pulse above 100 beats per minute or above 120 beats per minute, or a systolic blood pressure below 100 mm Hg or below 90 mm Hg. If you can find out the relevant standards and integrate them into the unit it will enhance the training.



OBJECTIVES:

By the end of this unit all trainees should be able to:

- Know what the NASG is and what it looks like.
- Identify at least 3 signs of shock.
- Understand the basics of how the NASG works.

Note: The following material is written in very simple language. The trainer may choose to teach it directly to trainees, and, if the trainees can read, the trainer can make printed materials as trainee handouts.



What is the NASG?

The Non-pneumatic Anti-Shock Garment (NASG) is a unique, simple, life-saving first-aid device made of neoprene and Velcro. Neoprene is a stretchy material, and Velcro is a “hook and loop” material that closes things tightly. The NASG can be used on women with heavy bleeding during pregnancy or after childbirth. This heavy bleeding is called obstetric haemorrhage or postpartum haemorrhage (PPH). The NASG can be applied by anyone, even those without medical training. The NASG is a unique tool in haemorrhage and shock management. The NASG is the only tool that can stabilize the pulse and blood pressure after a woman has gone into shock from obstetric haemorrhage. The NASG is meant to be used with, not instead of, other haemorrhage tools.

The NASG is made of segments: 3 segment pairs (#1, # 2, and #3) are placed around the patient’s legs, and 3 additional segments #4, #5, and #6 are placed around her pelvis (or hips) and abdomen (or stomach). A ball in segment #5 is placed over the woman’s umbilicus (navel, belly button), adding more pressure.



The NASG folded/closed





The NASG opened



3 segment pairs (#1, #2, and #3) are placed around the patient's legs

Segments #4, #5, and #6 are placed around her hips and stomach



A ball in segment #5 is placed over the woman's umbilicus (belly button, navel), adding more pressure



Obstetric Haemorrhage and the NASG

The NASG is a first-aid device that can be used to treat hypovolemic shock due to obstetric haemorrhage. **Obstetric haemorrhage** (OH) is defined as heavy bleeding during pregnancy, labor, or postpartum. Heavy bleeding that causes changes in pulse and blood pressure is a concern because the woman may go into hypovolemic shock. Shock is a condition where a woman may become unconscious and her body systems stop working properly.

Signs of Shock

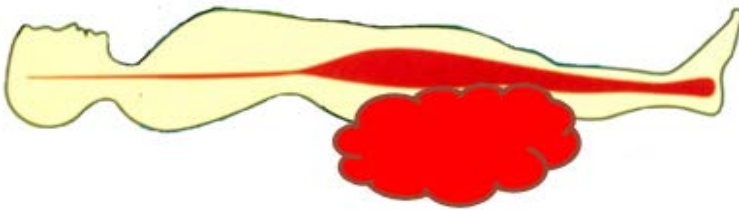
The NASG should be applied on a woman with obstetric haemorrhage who has signs of shock. If a woman is in shock, she may show one or more of the following signs:

1. **Increased pulse or faster heartbeat**
2. **Decreased blood pressure**
3. **Pallor (pale skin)**
4. **Sweating**
5. **Clamminess (her skin feels cold and wet)**
6. **Cold hands and feet**
7. **Confusion or agitation**
8. **Loss of consciousness**
9. **May or may not have heavy external bleeding**



How the NASG Works

In shock, a person's heart rate and pulse increase as the body tries to send oxygen to the vital organs, like: the heart, lungs, and brain. Blood pools in the lower body. The heart, lungs, and brain don't get enough oxygen. The tissues start to die.



A patient in shock from obstetric haemorrhage

The NASG reverses shock by decreasing blood flow to the lower body and abdomen, and increasing blood flow to the heart, lungs, and brain. It reduces blood loss because it compresses the blood vessels in the abdomen and pelvis. When blood vessels are compressed, blood flow through the vessels decreases. Therefore, a person loses less blood.



NASG decreases blood loss and reverses shock

Contraindications

The NASG should not be used on anyone with:

- A live baby in her uterus (womb) (unless there is no other way to save the mother's life and both the mother and baby will die)
- Bleeding in the upper body above the level of the NASG (for example the head, throat or chest)
- Open wounds on the chest



Unique Role

Women in shock need definitive care at a referral hospital. They may need blood transfusions, or they may need a procedure or surgery to stop the bleeding. They might need both blood and surgery. Blood and surgery are often only available at referral hospitals. The NASG is first-aid. It provides time to get a woman in shock to a referral hospital. It also provides time when there are delays at referral hospitals, increasing a woman's chance of survival until she receives definitive care.

The NASG is unique because it reverses shock and can be used with other haemorrhage and shock treatments. A woman can safely and comfortably wear the NASG for up to 48 hours.

Limitations

The NASG also has limitations. The NASG provides first-aid only. Therefore, it is still important to examine the patient, identify the cause(s) of bleeding and shock, and give IV fluids and blood transfusions as soon as possible. She may need drugs to help the uterus contract.

Part of a Health Care System

Finally, the NASG works best as part of a health care system for women with hypovolemic shock and obstetric haemorrhage. The best approach to obstetric haemorrhage is to prevent it from happening. If haemorrhage cannot be prevented, or if prevention fails, the NASG can provide time to get a woman to a referral hospital.



Knowledge Assessment

Trainees should be able to answer the following questions. See below for correct answers. Review any incorrect responses with trainees to ensure they have understood the material.

- 1) The ball in segment #5 of the NASG is placed over the woman's umbilicus (navel, belly button). **(True/False)**

- 2) Obstetric haemorrhage can happen any time during pregnancy, labor, or after childbirth. **(True/False)**

- 3) The NASG can be used to:
 - a. Stabilize women in shock until they receive definitive care at a referral hospital
 - b. Substitute for definitive care at a referral hospital

- 4) The NASG works by:
 - a. Reducing blood volume in the lower body
 - b. Increasing blood volume in the heart, lungs and brain
 - c. Decreasing blood loss
 - d. All of the above

- 5) The NASG can/cannot (circle one) be used with other haemorrhage treatments.



Knowledge Answers

- 1) The ball in segment #5 of the NASG is placed over the woman's umbilicus (navel, belly button).

(True/False)

Answer: True

- 2) Obstetric haemorrhage can happen any time during pregnancy, labor or after childbirth.

(True/False)

Answer: True

- 3) The NASG can be used to:

- a. Stabilize women in shock until they receive definitive care at a referral hospital
- b. Substitute for definitive care at a referral hospital

Answer: a. Stabilize women in shock until they receive definitive care

- 4) The NASG works by:

- a. Reducing blood volume in the lower body
- b. Increasing blood volume in the heart, lungs, and brain
- c. Decreasing blood loss
- d. All of the above

Answer: d. All of the above

- 5) The NASG CAN/cannot (circle one) be used with other haemorrhage treatments.

Answer: The NASG CAN be used with other haemorrhage treatments.

