

NASG APPLICATION



Applying the NASG

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Applying the NASG

The best way to learn how to use the NASG is to learn about it in a pre-service health worker curriculum or in an in-service training. However, if you cannot attend a training, you can learn how to apply the NASG by reading these step-by-step instructions, watching the NASG video, watching the NASG Powerpoint, and practicing NASG application using the checklist at the end of this Unit.

When to Apply the NASG

The NASG should be applied to a woman who is experiencing obstetric haemorrhage and showing signs of shock. If a woman is in shock, she may show one or more of the following signs:

- | | |
|---|---|
| 1. Increased pulse/heart rate/tachycardia | 6. Clamminess |
| 2. Decreased blood pressure/hypotension | 7. Cold extremities |
| 3. Pallor (pale skin) | 8. State of confusion or agitation |
| 4. Rapid respiration/tachypnea | 9. Loss of consciousness |
| 5. Sweating/diaphoresis | 10. May or may not have heavy external bleeding |



In this Unit You Will Learn Three Methods of Application

Each method of application has an icon associated with it, so you can easily see which method is being described.



1. How to apply to a conscious woman who is average height

The icons are an average height woman and an open eye.



2. How to apply to a conscious woman who is shorter than average

The icons are a shorter woman and an open eye.



3. How to apply to an unconscious woman

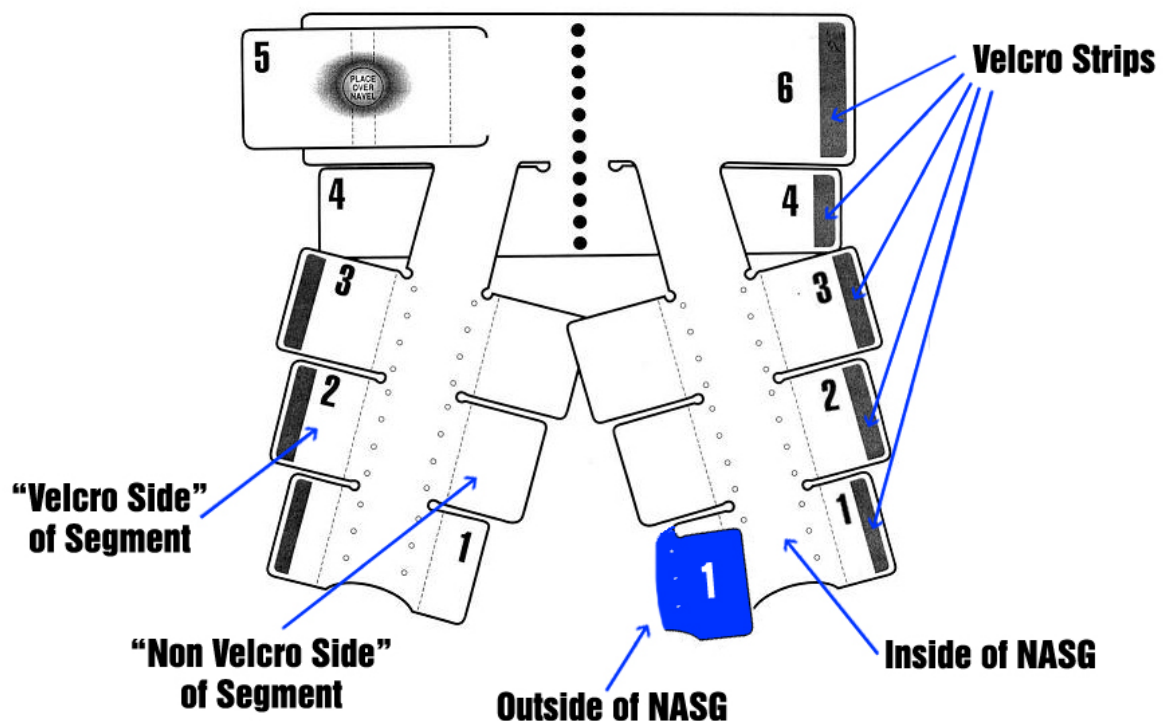
The icon is a pair of closed eyes.



Overview of Application on All Women

The NASG is applied from segment pair #1 up the woman's body to segment #6, starting with the ankles and ending with the abdomen. The leg segments are comprised of segment pairs: segment pair #1 wraps around the ankles, segment pair #2 wraps around the calves and segment pair #3 wraps around the thighs. Each pair must be completed entirely before moving upward to apply the next pair. For example, segments #1 must be applied to both ankles before moving on to apply segments #2 to both calves.

The segments are closed with Velcro. Each segment has a side with a Velcro strip, which we call the "Velcro-side" and a plain side without a Velcro strip, which we call the "non-Velcro side." The NASG has an inside and an outside. The Velcro sticks to the outside surface only.



Applying Tightly

To apply tightly, apply each segment by first pulling the non-Velcro side with all your strength across the leg or body. Hold the segment in place with that hand. Next, using your other hand, pull the Velcro side of the segment, with all your strength, over the leg or body. Move the first hand out and secure the Velcro side to the neoprene.



Use both hands and all your strength to close each segment
([see below](#) for step by step instructions)

The “SNAP TEST”



How do you know if the NASG is tight enough? You can check it by performing the “**SNAP TEST**.” Put one or two fingers under the top layer of the NASG segment. Pull the fabric up and then let it go. If the segment is tight enough, the fabric will snap and you will hear a sharp sound, like the sound when you snap your fingers.

If the sound is dull and soft, the segment is too loose. Quickly undo the segment, then reapply using more strength. Check the tightness of each segment using the **SNAP TEST** as you apply the NASG, before moving on to the next segment pair.



SNAP TEST
([see below in Step 4](#) for directions on how to perform SNAP TEST)





NASG APPLICATION on an Average Height, Conscious Woman



STEP 1

When a woman is in shock, call for help. Know where your NASGs are stored.



**Know where your
NASGs are stored**





STEP 2

If the woman is conscious, lying down, and can move, first ask her to raise her feet and then slide the NASG up to her hips. Then ask her to place her feet flat on the surface and slide the open NASG underneath her.



Open the NASG and ask the woman to raise her feet



Slide the NASG under her legs to her hips



Ask the woman to put her feet flat



Ask her to raise her hips



If the woman is sitting up in a wheelchair, chair, or already standing, spread the NASG out on a bed or flat surface, and ask the woman to lie down on the NASG.



NASG opened on flat surface



Woman lying on opened NASG





STEP 3

Make sure the NASG is in the proper position on the woman. Place it so that the top of the NASG is at her lowest rib. Place the ball in segment #5 over her umbilicus (navel, belly button), but don't close it.



Check that the top of the NASG is at the level of the woman's lowest rib



Place the ball in segment #5 over the umbilicus, but don't close the #6 segment





STEP 4

Starting at her ankles, close segment pair #1 tightly around each ankle. (If segment pair #1 extends past her feet, see instructions below for [Application on a Shorter Woman.](#))



Starting at her ankles, close segment pair #1 tightly around each ankle

To apply tightly, apply each segment by

- Using one hand, pull the non-Velcro side with all your strength across the leg or body.*
- Hold the segment in place with that hand, while using your other hand to pull the Velcro side of the segment straight up.*
- Next, pull the Velcro side of the segment, with all your strength, over the leg or body.*
- Move the first hand out and secure the Velcro side to the non-Velcro side.*

The pictures on the following pages show application of segment # 2, but the same principle applies to all segments.





**Hold the non-Velcro side of the segment
in one hand**



**Using one hand, pull the non-Velcro side
with all your strength across
the leg or body**



**Hold the segment in place with that hand,
while pulling straight up on the
Velcro side of the segment**





Next, pull the Velcro side of the segment, with all your strength, over the leg or body



Move the first hand out and secure the Velcro side to the non-Velcro side



To make sure the application is tight enough, perform the SNAP TEST





SNAP The “SNAP TEST”



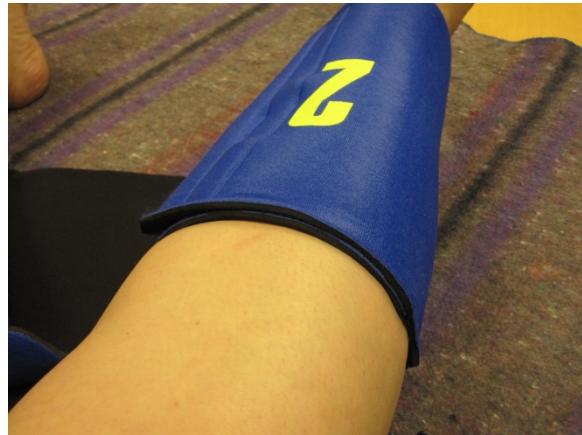
Once you have placed the NASG segment on the leg, there will be two layers of neoprene



Place one or two fingers between the top layer of the segment and the second layer of the segment



Pull straight up with your finger, then release the top layer



The neoprene will make a sharp snapping sound. This means the segment has been applied tightly enough



Applying Leg Segments with Two People

If there are two people available, each person can work on one leg, so that segment pair #1 (ankles), segment pair #2 (calves), and segment pair #3 (thighs) are applied at the same time. If only one person is available, then that person should apply both segments #1, then both segments #2, and then both segments #3. If applying the NASG alone, do not complete one leg and then the other. Instead, be sure to apply each segment pair before moving to the next segment pair further up on the body.



Two people, one on each leg, can rapidly close the leg segments





STEP 5



Close segment pair #2 on each calf as tightly as possible. Be sure to close the segments tightly enough so that you hear a sharp sound when you do the **SNAP TEST**.



STEP 6

Apply segment pair #3, the thigh segments, in the same way as segment pairs #1 and #2. Try to leave room so that the woman's knee can bend between the two segments placed above and below the knee (segment pair #2 and segment pair #3), but note that this is not as important as rapid application. Be sure to close the segments tightly enough so that you hear a sharp sound when you do the **SNAP TEST**.



Apply segment pair #3, the thigh segments, in the same way as segment pairs #1 & #2





**Try to leave the knee free so it can bend.
However, rapid application is more
important than a bending knee**



STEP 7

Segment #4, the first single segment, goes around the woman's pelvis. It is very important that only one person apply segments #4, #5 and #6. If two people apply these segments, you may



apply too much pressure and cause breathing problems for the woman.

**Segment #4, the first single segment,
goes around the woman's pelvis**





STEP 8

Place segment #5 (the segment with the pressure ball) directly over her umbilicus (navel, belly button). Segment #5 is a half segment, it has no Velcro side and it doesn't wrap around the woman. Then cover segment #5 with the non-Velcro side of segment #6 as tightly as possible. Like segment #4, only one person should close segments #5 and #6.



First place segment #5 with the ball over the woman's umbilicus (navel, belly button)



Next, stretch the non-Velcro side of segment #6 over segment #5 and hold it firmly in place with one hand





Next, stretch the Velcro side of segment #6 up and over the abdomen, and secure it tightly

Close the #6 segment by using all your strength to stretch the Velcro part of segment #6 over the non-Velcro part of segment #6.

If the Woman is Larger Than Average



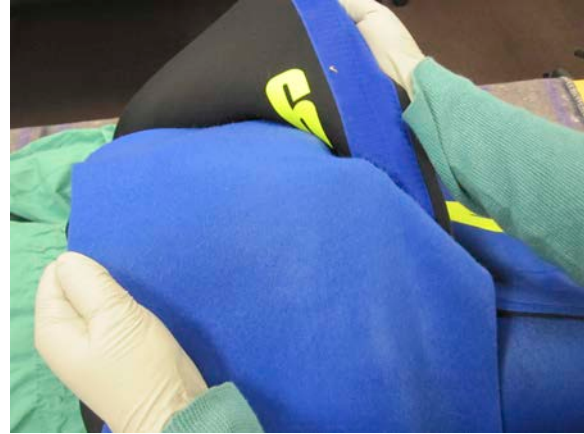
If the woman is large, you may need to get as close to her as possible, even getting up on the bed, and on the same side as the Velcro side, if possible. Use leverage to pull the segment straight up, then pull across her body.



Make sure the patient can breathe normally with the NASG in place by asking her to take a deep breath. Most women will be able to take a deep breath easily. If she cannot take a deep breath, loosen the abdominal segment #6 slightly; **do not remove the abdominal segment, #6.**



Release the Velcro while holding the non-Velcro side in place



Keep holding the non-Velcro side while you move the Velcro side to loosen it



Close the segment a little less tightly, then ask her again if she can take a deep breath

End of Step-By-Step Application on an Average Height, Conscious Woman



Once the NASG is completely applied, you can check the uterus to see if it is firm. Place one hand under segment #5 (the segment with the ball) so that your hand is directly on the woman's abdomen and give uterine massage. The NASG will stretch to allow your hand to fit between segment #5 and the woman's abdomen.



Place one hand under segment #5 (the segment with the ball), so that your hand is directly on the woman's abdomen, and give uterine massage



Follow standard procedures for obstetric haemorrhage and hypovolemic shock, based on haemorrhage etiology. If your facility cannot provide blood transfusions or surgery or you have placed the NASG outside a facility, the woman must be transferred in the NASG to a higher level facility. (See the unit on [Referring and Transporting Women in the NASG.](#))





NASG APPLICATION on a Shorter Woman



STEP 1

First place the woman on the NASG or slide the NASG under the woman. Make sure the top of the NASG is at the woman's lowest rib.



Make sure the top of the NASG is at the level of the woman's lowest rib



Place the ball in segment #5 over her umbilicus (navel, belly button), but do not close it





STEP 2

Now go down to her feet. If the woman is shorter, the NASG segment pair #1 will go past her feet.



If the woman is shorter, the NASG segment pair #1 will go past her feet



You can make the NASG shorter



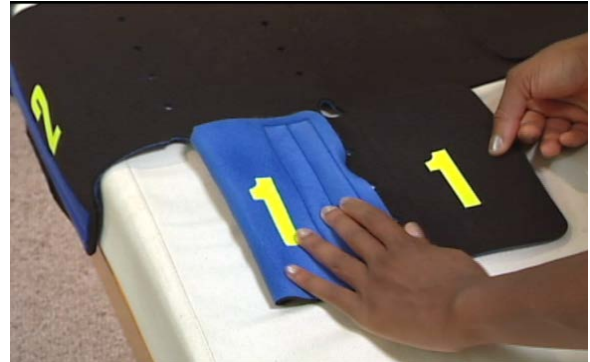


STEP 3

To make the NASG shorter:



First, fold the Velcro side in



Then fold the plain, non-Velcro side on top of the Velcro side



When it is closed correctly you will not be able to see the Velcro



Fold closed segment pair #1 up into the inside of #2 segment pair





STEP 4



Apply segment pair #2 on the patient's ankles.

**Apply segment pair #2
on the patient's ankles**



STEP 5



Apply segment pair #3 to the thighs, as on an average height woman.



STEP 6

Continue to apply the rest of the segments as you would to any woman.

See [Step 7](#) of Application on an Average Height, Conscious Woman.





NASG APPLICATION on an Unconscious Woman

When a woman is unconscious, you will need someone to assist you to apply the NASG. However, segments #4, #5 and #6 (pelvic and abdominal) should still be closed by only one person.



STEP 1

Turn the woman on her left side. Lay an NASG on the bed or floor next to her and open only segments #4, #5 and #6. Keep segment pairs #1, #2 and #3 closed, but not fastened with Velcro. (See **Cleaning and Folding Unit** for the correct way to keep NASG from sticking).



Lay an NASG on the bed or floor next to her and
open only segments #4, #5 and #6





STEP 2

Fold the Velcro strips on segments #4 and #6 (on the side without the ball) once towards the yellow midline dots (towards the black side of the NASG).



**Segments #4 and #6
with Velcro strips on the edge**

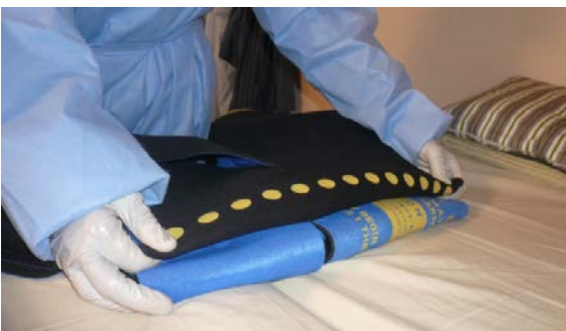


Velcro strips rolled toward the inside

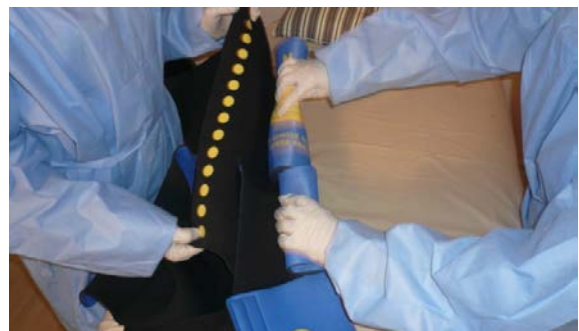


STEP 3

Roll segments #4 and #6 toward the yellow dotted midline again so that the rolled edge is lined up along the yellow dotted midline.



**Roll the Velcro sides of
segments #4 and #6 all the way to the
midline yellow dots**



**The NASG will now
be folded in half**





STEP 4

With the woman still on her left side, place the rolled NASG on the bed with the dotted line along the woman's spine and the top edge of the NASG at the level of her lowest rib. Place the rolled segments #4 and #6 under her body.



**Place the rolled segments #4 and #6
under her body**





STEP 5

Next turn the woman over the rolled portions of the NASG. She should now be on her right side. The person on her left (behind her) now pulls the rolled segments #4 and #6 out from under the woman.



Pull the rolled segments #4 and #6 out from under the woman



STEP 6



The woman should now be lying on an opened NASG

Turn the woman on her back. She is now lying with the top edge of the NASG at her lowest rib. Although you can't see them without looking under her, the yellow dots should be centered along her spine. Check the position of the NASG by placing, but not closing, segment #5 with the ball over her umbilicus. Adjust the NASG if it is NOT over her umbilicus.





STEP 7

Begin with segment pair #1 and apply the NASG on the woman in the same order as you would a conscious woman (See [Application on a Conscious Woman](#), if she is shorter, see [Application on a Shorter Woman](#)). Keep in mind that you must close the segments tightly enough that you can hear a snapping sound when you do the **SNAP TEST**.



Make sure to check all segments using the "SNAP TEST"



Materials for Skills Practice

1. NASGs
2. Gloves
3. NASG Application Checklist
4. A model, doll or a volunteer
5. A partner for application on an unconscious woman and/or for more rapid application of leg segments
6. NASG Video (application training is at 1 minute 20 seconds (1:20) in the NASG training video)

Checklists for Learning and Practice

You can use this checklist while first learning, practicing, or doing drills by following each step. Practice on another health care worker or on a volunteer, but not on a pregnant woman. Once you feel you know how to apply the NASG, you can assess your skills by application on a volunteer or model without using the checklist, and then reviewing the application by using the checklist to be sure you completed all the steps correctly and in the right order.





Learner Checklist: NASG Application- Average Height, Conscious Woman



| NASG Application on an Average Height, Conscious Woman [Learner] | |
|---|-----------|
| STEPS TO NASG APPLICATION | ✓ If Done |
| 1. Place the NASG under the woman with the top edge of the NASG at the level of the woman's lowest rib and the pressure ball over her umbilicus. Do not close segments #5 and #6. | |
| 2. Turn to the woman's feet; if the #1 segment extends past her feet, go to the checklist for applying the NASG to a shorter woman. | |
| 3. If you are practicing and learning with another health care worker, two people can apply the leg segment pairs (#1, #2, #3) at the same time. Close segment pair #1 tightly around each ankle. Pull back the fabric and snap it to make a sharp sound. If the sound is dull, tighten the segment. (SNAP TEST) | |
| 4. Close segment pair #2 on each calf as tightly as possible. If possible, leave room so that the woman's knee can bend between the two segments placed above and below the knee. Do the SNAP TEST. | |
| 5. Apply segment pair #3, the thigh segments. Do the SNAP TEST. | |
| 6. Apply segment #4 around the woman's pelvis; only one person should apply segment #4. | |
| 7. Place segment #5 with the pressure ball over her umbilicus; only one person should apply segment #5. | |
| 8. Close segment #6; only one person should apply segment #6. | |
| 9. Make sure the patient can breathe normally with the NASG in place by asking her to take a deep breath. If she cannot, loosen the NASG and ask her again to take a deep breath. | |

*Review the checklist. If you left out two or more steps, or did them out of order, practice the NASG application again as often as you need to feel competent. Then repeat the application with an observer watching you with the checklist. Do the same thing with the checklists for **SHORTER WOMAN** and **UNCONSCIOUS WOMAN**.*





Learner Checklist: NASG Application on a Shorter, Conscious Woman



| NASG Application on a Shorter, Conscious Woman: [Learner] | |
|---|-----------|
| STEPS TO NASG APPLICATION | ✓ If Done |
| 1. Place the NASG under the woman with the top edge of the NASG at the level of the woman's lowest rib and the pressure ball over her umbilicus. Do not close segments #5 and #6. | |
| 2. Turn to the woman's feet; if the #1 segment extends past her feet, pull the #1 segment to the side. | |
| 3. Close the Velcro side of segment #1 onto the inside of the segment. | |
| 4. Fold the non-Velcro side of segment #1 over the Velcro side, so the Velcro side will not be visible. | |
| 5. Fold the closed segment #1 up into the inside of segment #2, do this on both legs of the NASG. | |
| 6. Begin application with segment pair # 2 at the ankles. | |
| <i>The remaining steps are the same as steps 3-9 on an average height, conscious woman</i> | |
| 7. If you are practicing and learning with another health care worker, two people can apply the leg segment pairs (#2, #3) at the same time. Close segment pair #2 on each ankle as tightly as possible. If possible, leave room so that the woman's knee can bend between the two segments placed above and below the knee. Pull back the fabric and snap it to make a sharp sound. (SNAP TEST) | |
| 8. Apply segment pair #3, the thigh segments. Do the SNAP TEST. | |
| 9. Apply segment #4 around the woman's pelvis; only one person should apply segment #4. | |
| 10. Place segment #5 with the pressure ball over her umbilicus; only one person should apply segment #5. | |
| 11. Close segment #6; only one person should apply segment #6. | |
| 12. Make sure the patient can breathe normally with the NASG in place by asking her to take a deep breath. If she cannot, loosen the NASG and ask her again to take a deep breath. | |

Review the checklist. If you left out two or more steps, or did them out of order, practice the NASG application again as often as you need to and then repeat the application with an observer.





Learner Checklist: NASG Application - Unconscious Woman



| NASG Application on an Unconscious Woman [Learner] | |
|--|-----------|
| STEPS TO NASG APPLICATION | ✓ If Done |
| 1. Call for help. | |
| 2. Turn woman to her left side. | |
| 3. Lay NASG on floor or bed next to woman with segments #4, #5, #6 open, and with leg segment pairs #1, #2, and #3 closed. The ball in segment #5 should be behind the woman. | |
| 4. Fold Velcro strips in segments #4 and #6 once to the inside towards the painted yellow dots. | |
| 5. Roll segments #4 and #6 towards the yellow midline dots until the folded edge is lying along the yellow dots. | |
| 6. Place rolled NASG so that yellow dots are along the woman's spine, and the top edge of the NASG is at her lowest rib. | |
| 7. Push the rolled segments #4 and #6 under the woman's body. | |
| 8. Turn the woman over the rolled segments so that she is now lying on her right side. | |
| 9. The second person pulls out the rolled Velcro parts of segments #4 and #6. | |
| 10. Turn the woman onto her back. | |
| 11. Check position of the NASG by placing the ball in segment #5 over her umbilicus, but do not close segments #5 or #6. | |
| 12. Turn to the woman's feet; if the #1 segment extends past her feet, go to the checklist for applying the NASG to a shorter woman (or begin folding the #1 segment into the # 2 segment). | |
| <i>The remaining steps are the same as on an average height, conscious woman. If the woman is shorter add in the adjustment described in the checklist for application on a shorter woman.</i> | |
| 13. If you are practicing and learning with another health care worker, two people can apply the leg segment pairs (#1, #2, #3) at the same time. Close segment pair #1 tightly around each ankle. Pull back the fabric and snap it to make a sharp sound. If the sound is dull, tighten the segment. (SNAP TEST) | |



| | |
|---|--|
| 14. Close segment pair #2 on each calf as tightly as possible. If possible, leave room so that the woman's knee can bend between the two segments placed above and below the knee. Do the SNAP TEST. | |
| 15. Apply segment pair #3, the thigh segments. Do the SNAP TEST. | |
| 16. Apply segment #4 around the woman's pelvis; only one person should apply segment #4. | |
| 17. Place segment #5 with the pressure ball over her umbilicus; only one person should apply segment #5. | |
| 18. Close segment #6; only one person should apply segment #6. | |
| 19. Make sure the patient can breathe normally with the NASG in place by asking her to take a deep breath when she becomes conscious. If she cannot, loosen the NASG and ask her again to take a deep breath. | |

Review the checklist. If you left out two or more steps, or did them out of order, practice the NASG application again as often as you need to and then repeat the application with an observer.



Knowledge Assessment

See if you can answer these questions correctly. After you have marked your answers look below for the correct answers. If you answered any of the questions incorrectly, go back to the section about that topic and review.

1. Always start application by closing the abdominal segments (#5 and #6). **(True/False)**
2. What should you do to ensure that the leg segment pairs (#1, #2, #3) are applied tightly enough?
 - a. Ask the patient if they feel tight enough.
 - b. Pull up on the top layer of each closed leg segment with one or two fingers and then let go; if it is tight enough, the segment should make a sharp “snap” sound.
 - c. Don’t worry about how tight the leg segments are.
 - d. If the Velcro is completely fastened, the leg segment is tight enough.
3. When placing the NASG under the woman, the top edge of the NASG should be level with the patient’s
 - a. Umbilicus (navel, belly button)
 - b. Lowest rib
 - c. Shoulder
 - d. Elbow
4. When placing the leg segments, you should cover the knee with the segments, so that the woman cannot bend her knee. **(True/False)**
5. The ball in segment #5 should be placed directly over the woman’s umbilicus (navel, belly button). **(True/False)**



Knowledge Answers

1. Always start application by closing abdominal segments (#5 and #6). **(True/False)**

Answer: False. Application always starts at the ankles with segment pair #1 (or segment pair #2 for shorter women).

2. What should you do to ensure that the leg segment pairs (#1, #2, #3) are applied tightly enough?
- Ask the patient if they feel tight enough.
 - Pull up on the top layer of each closed leg segment and then let go; if it is tight enough, the segment should make a sharp “snap” sound.
 - Don’t worry about how tight the leg segments are.
 - If the Velcro is completely fastened, the leg segment is tight enough.

Answer: b. Pull up on the top layer of each closed leg segment with one or two fingers and then let go; if it is tight enough, the segment should make a sharp “snap” sound (SNAP TEST).

3. When placing the NASG under the woman, the top edge of the NASG should be level with the patient’s
- Umbilicus
 - Lowest rib
 - Shoulder
 - Elbow

Answer: b. Lowest rib

4. When placing the leg segments, you should cover the knee with the segments, so that the woman cannot bend her knee. **(True/False)**

Answer: False. When placing leg segments, you should try not to cover the knee so that the woman can bend it while wearing the NASG.

5. The ball in segment #5 should be placed directly over the woman’s umbilicus (navel, belly button). **(True/False)**

Answer: True

