

CREATING PATIENT DISCHARGE TEACHING FOR
NEGATIVE PRESSURE WOUND THERAPY
HOME CARE TO IMPROVE POSTPARTUM
INFECTION OUTCOMES

by

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ABSTRACT

Background: Obesity, defined as a Body Mass Index (BMI) greater than 30 kg/m², has been on an all-time increase throughout the world – especially in the United States – and there are no indications of obesity rates declining in the near future. These findings are of increasing concern due to the risks that occur with obesity and the subsequent risks that obese women will encounter during pregnancy, particularly infection.

Problem: Researchers have begun trials evaluating the effectiveness of prophylactic NPWT following a cesarean section in obese women compared to a standard post-operative dressing in this population to reduce infection rates. However, there are no specific instructions for obese postpartum women who are discharged from the hospital with a wound vac.

Implementation: Using a local county facility, the researcher used de-identified charts to review certain discharge instruction handouts that were being given to either obese postpartum women or to obese patients sent home with a wound vac. A universal discharge instruction packet for obese post cesarean women going home with a wound vac was created by compiling parts of relevant information from the county facility's database.

Conclusion: The creation of discharge instructions for the specific population of obese post cesarean women going home with negative pressure wound therapy was needed in order to properly educate these women and to further prevent infection complications. The goal is to reduce the rate of postpartum infections in the obese population by using wound vacs, teaching women how to properly care for them, and by providing appropriate discharge information.

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Creating Patient Discharge Teaching for Negative Pressure Wound Therapy Home Care to
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Obesity, defined as a Body Mass Index (BMI) greater than 30 kg/m², has been on an all-time increase throughout the world – especially in the United States – and there are no indications of obesity rates declining in the near future. According to the Center for Disease Control (CDC), more than one-third (34.9%) of all adults in the U.S. are obese (Center for Disease Control, 2014). Obesity can lead to complications such as coronary heart disease, type II diabetes mellitus, hypertension, stroke, high cholesterol, and respiratory problems. As a result of obesity's many complications, the total cost to cover care for obese patients was greater than \$147 billion in 2008 (Ogden, Carroll, Kit, & Flegal, 2013).

Obesity rates are higher in women than in men; 36.1% of women over the age of 20 are obese, compared to only 33.5% of men (Ogden et al., 2013). The American Congress of Obstetricians and Gynecologists (ACOG) found that in 2013, 50% of all pregnant women were obese (with a BMI greater than 30), and 8% of reproductive age women were extremely obese (with a BMI greater than 40) (ACOG Committee Opinion, 2013). These findings are of increasing concern due to the risks that occur with obesity and the subsequent risks that obese women will encounter during pregnancy. These include, but are not limited to, gestational diabetes mellitus, preeclampsia, and postpartum weight retention (ACOG Committee Opinion, 2013). Women with a BMI above 30 kg/m² are twice as likely to undergo cesarean section surgery as their non-obese counterparts (Alger, Mark, & Terplan, 2014). In addition, obese women are also at a higher risk for postpartum complications, including higher infection rates, delayed wound healing, hemorrhage, and coagulation problems (ACOG Committee Opinion, 2013). Postpartum infection is of greatest concern because of its extremely high prevalence; one in

every two obese women will get an infection (Alger et al, 2014). The risk of postpartum surgical site infection rate has been shown to double for every five-unit increase in a woman's BMI above 30 kg/m² (Alger et al, 2014). The seriousness of postpartum infections poses a need for new interventions to decrease infectious morbidity in this population.

Negative Pressure Wound Therapy (NPWT) has been used for complex, chronic, non-healing wounds to increase blood flow and decrease wound surface area in order to assist in wound healing (Alger et al, 2014). NPWT, commonly known as Wound Vacuum Assisted Closure (VAC), has typically been used as treatment for wounds that would not heal by other means. Recently, researchers have begun trials evaluating the effectiveness of prophylactic NPWT following a cesarean section in obese women compared to a standard post-operative dressing in this population to reduce infection rates. According to clinicaltrials.gov, there are currently 5 ongoing studies in Dallas, Texas, Southern Denmark, Iowa City, Iowa, St. Louis, Missouri, and Philadelphia, Pennsylvania.

The purpose of this project is to create postpartum discharge teaching specific to obese women discharged home with negative pressure wound therapy following a cesarean section in order to reduce infection rates.

Relevant Literature

A retrospective study by Myles, Gooch, & Santolaya (2002), examined obesity in patients who underwent cesarean section. The investigators reviewed 574 charts of women from the Northwest Texas Hospital in Amarillo who underwent cesarean to determine the incidence of infectious morbidity related to surgery. Data were analyzed using SPSS 9.0 for all statistical comparisons. Researchers concluded that even if prophylactic antibiotics were given and the

surgery was elective, obesity remained an independent risk factor for post-surgery infectious morbidity. The study raised clinical questions concerning administration of prophylactic antibiotics: are the doses high enough? Is the timing antibiotics administered effective? Do antibiotics need to be given for a longer amount of time after the operation? In addition to further investigation on the use of antibiotics, the researchers also advised in more education to reduce the weight gained preconception (Myles et al., 2002).

Wall, Deucy, Glantz, and Pressman's (2003) retrospective study, "Vertical Skin Incisions and Wound Complications in the Obese Parturient" was done to examine wound healing in obese women following cesarean. The perinatal database from Strong Memorial Hospital in Rochester, New York was used to identify 239 women with an increased BMI undergoing their first cesarean delivery who had any kind of postoperative wound complication. StatView 5.0 was used for all statistical tests, including a Chi-Square test for nominal values and the *t* test for continuous variables. Authors concluded from their research that obese women had higher incidences of wound complications than non-obese women, especially with a vertical skin incision (compared to a transverse incision). There may be limited applicability to the general population due to the small sample size; however, authors still found clinical significance in the type of wound incision when compared to the post-operative complications.

A report created by the Canadian Agency for Drugs and Technologies in Health (CADTH) compiled a total of 16 different studies to determine clinical effectiveness, cost-effectiveness, and guidelines for the use of negative pressure wound therapy in managing high risk surgical incisions or high risk patients (Canadian Agency for Drugs and Technologies in Health, 2013). After reviewing three systematic reviews, two randomized control trials, and 11 non-randomized studies, authors found mixed results. However, the majority of the studies (11) concluded that

NPWT produced positive outcomes and two studies found no difference between NPWT and standard dressings. The three systematic reviews concluded there is not enough relevant information to make a sound recommendation (CADTH, 2013). Although the studies included in this review were not necessarily geared toward the obstetric population, they did include valuable information concerning the obese, high risk population. The majority of the studies finding that NPWT is beneficial in reducing infection and wound dehiscence in high risk (obese) populations. This review provides basis for the current studies being conducted regarding NPWT for obese cesarean section patients.

Researchers Alger, Mark, and Terplan (2014) conducted a retrospective cohort pilot study to determine the effectiveness of negative pressure wound therapy following cesarean section in morbidly obese patients (Alger et al, 2014). In the study, 48 women were included in the standard dressing group while 21 women were included in the NPWT group, all of whom had a BMI of greater than 45 kg/m². The groups were otherwise similar in risk factors, including smoking history, diabetes mellitus, and group beta streptococcus positivity. Of the 48 women with standard dressings, 5 (10.4%) presented with wound complications, as defined by the International Classification of Diseases, 9th Revision Codes (Alger et al, 2014). The researchers concluded that with 10% representing with complications, a rate of 1 in 10 postoperative women would be expected to present with the same complications, putting a large burden on the healthcare system. Because the study has a relatively small sample size, its findings indicate the need for a larger study to be performed. However, the authors are expecting similar results, even with a larger sample size (Alger et al, 2014).

Next Steps

After extensively reviewing current literature as well as the database of discharge instructions at a large county facility, the researcher found there are no specific instructions for obese postpartum women who are discharged from the hospital with a wound vac. Although this practice is under study, patients are still in need of proper education materials.

Using the local county facility, the researcher used de-identified charts to review certain discharge instruction handouts that were being given to either obese postpartum women or to obese patients sent home with a wound vac. All discharge instructions reviewed came from the facility's universal database. The instructions selected for review, which can be seen in Appendix 1, were taken from charts of both postpartum women and post-op patients who had a BMI over 30 kg/m². A universal discharge instruction packet for obese post cesarean women going home with a wound vac was created by compiling parts of relevant information from the county facility's database. The researcher essentially included additional information from wound vac instructions into cesarean instructions. Information that was included was selected based on the current literature studied. No information was changed from the previous instructions; the new instructions combined all relevant information from both populations into one document. The new instructions can be reviewed in Appendix 2.

Summary & Conclusion

The creation of discharge instructions for the specific population of obese post cesarean women going home with negative pressure wound therapy was needed in order to properly educate these women and to further prevent infection complications. Information was pulled from many sources in order to cover everything needed. The researcher is planning to work with

a local facility to implement the use of the new discharge instructions. The goal is to reduce the rate of postpartum infections in the obese population by using wound vacs, teaching women how to properly care for them, and by providing appropriate discharge information.

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Appendix 1: Cesarean Section (Postpartum Care)

These discharge instructions provide you with general information on cesarean section and caring for yourself after you leave the hospital. Your caregiver may give you *specific* instructions.

Please read these instructions and refer to them in the next few weeks. If you have any questions regarding these instructions, you may call the nursing unit. If you have any problems after discharge, please call your doctor. If you are unable to reach your doctor, you should seek help at the nearest Emergency Department.

ACTIVITY

- Rest, as much as possible the first two weeks at home
- Limit your housework and social activity. Increase your activity gradually as your strength returns. Do not climb stairs more than two or three times a day.
- Do not lift anything heavier than your baby.
- Follow your doctor's instructions about driving a car.
- Limit wearing support panties or control-yop hose, since relying on your own muscles helps strengthen them.
- Ask your doctor about exercises.

NUTRITION

- You may return to your usual diet.
- Drink 6 to 8 glasses of fluid a day.
- Eat a well-balanced diet, including portions of food from the meat/protein, milk, fruit, vegetable, and bread groups.

ELIMINATION

You should return to your usual bowel function. If constipation is a problem, you may take a mild laxative such as Milk of Magnesia. Gradually add more fruit, vegetable, and bran to your diet, and increase your fluids.

HYGIENE

You may shower, wash your hair, and take tub baths, unless your doctor tells you otherwise. Continue peri-care until your vaginal discharge stops. Do not douche or use tampons for three weeks.

FEVER

If you feel feverish or have shaking chills, take your temperature. If your temperature is 101°F (38.3°C) or above even once, or it is 100.4°F (38°C) two times in a four hour period, call your doctor. The fever

may indicate infection. If you call early, infection can be treated with antibiotics, and hospitalization may be avoided.

PAIN CONTROL

You may still have mild discomfort. You may have received a prescription for pain medicine or you may use an “over the counter” pain medicine. If the pain is not relieved by your medicine or becomes worse, call your caregiver.

INCISION CARE

Clean your *incision* (cut by the surgeon) with soap and water. Leave the incision without a dressing unless it is draining or irritated. If you have small adhesive strips across the incision and they do not fall off within 5 days, carefully peel them off. Check the incision daily for increased redness, drainage, swelling, or separation of skin. Call your caregiver if any of these happen.

VAGINAL CARE

You may have vaginal discharge for up to 6 weeks. If the vaginal discharge becomes bright red, foul smelling, heavy in amount, or if you have burning or frequency on urination, call your caregiver.

SEXUAL INTERCOURSE

It is best to follow your caregiver’s advice about when you may safely resume sexual intercourse. Most women can begin to have intercourse two to three weeks after their baby’s birth.

You can become pregnant before you have a period. If you do resume sexual intercourse, you must use birth control if you do not want to become pregnant right away.

HEALTH PRACTICES

It is still important you have a yearly pelvic examination. Please continue monthly self-breast examination.

BREAST CARE

If you are not breastfeeding and your breasts become tender, hard, or leak milk, you may wear a firm fitting bra and apply ice to the breasts. If you are breastfeeding, call your caregiver if you have breast pain, flu-like *symptoms* (problems), fever, or hardness and reddening of your breasts.

POSTPARTUM BLUES

After the excitement of having the baby goes away, you may commonly have a period of low spirits or “blues”. This may be caused by the changing hormone levels in your body. You may want to contact your caregiver if this is worrisome.

ExitCare Patient Information, 2008.

Appendix 1: Vacuum-Assisted Closure Therapy

Vacuum-assisted closure (VAC) therapy uses a device that removes fluid and germs from wounds to help them heal. It is used on wounds that cannot be closed with stitches. They often heal slowly. Vacuum-assisted therapy helps the wound stay clean and healthy while the open wound slowly grows back together.

Vacuum-assisted closure therapy uses a bandage (*dressing*) that is made of foam. It is put inside the wound. Then, a drape is placed over the wound. The drape sticks to your skin to keep air out, and to protect the wound. A tube is hooked up to a small pump and is attached to the drape. The pump sucks out the fluid and germs. Vacuum-assisted closure therapy can also help reduce the bad smell that comes from the wound.

HOW DOES IT WORK?

The vacuum pump pulls fluid through the foam dressing. The dressing may wrinkle during this process. The fluid goes into the tube and away from the wound. The fluid then goes into a container. The fluid in the container must be replaced if it is full or at least once a week, even if the container is not full. The pulling from the pump helps to close the wound and bring better circulation to the wound area. The foam dressing covers and protects the wound. It helps your wound heal faster.

HOW DOES IT FEEL?

- You might feel a little pulling when the pump is on.
- You might also feel a mild vibrating sensation.
- You might feel some discomfort when the dressing is taken off.

CAN I MOVE AROUND WITH VACUUM-ASSISTED CLOSURE THERAPY?

Yes, it has a backup battery which is used when the machine is not plugged in, as long as the battery is working you can move freely.

WHAT ARE SOME THINGS I MUST KNOW?

- **Do not** turn off the pump yourself, unless instructed to do so by your healthcare provider, such as for bathing.

- **Do not** take off the dressing yourself, unless instructed to do so by your caregiver.
- You can wash or shower with the dressing. However, **do not** take the pump into the shower. Make sure the wound dressing is protected and covered with plastic. The wound area must stay dry.
- **Do not** turn off the pump for more than 2 hours. If the pump is off for more than 2 hours, your nurse must change your dressing.
- Check frequently that the machine is on, that the machine indicates the therapy is on, and that all clamps are open.

THE ALARM IS SOUNDING! WHAT SHOULD I DO?

- Stay calm.
- **Do not** turn off the pump or do anything with the dressing.
- Call your clinic or caregiver right away if the alarm goes off and you cannot fix the problem. Some reasons the alarm might go off include:
 - The fluid collection chamber is full.
 - The battery is low.
 - The dressing has a leak.
- Explain to your caregiver what is happening. Follow the instructions you receive.

WHEN SHOULD I CALL FOR HELP?

- You have severe pain.
- You have difficulty breathing.
- You have bleeding that will not stop.
- Your wound smells bad.
- You have redness, swelling, or fluid leaking from your wound.
- Your alarm goes off and you do not know what to do.
- You have a fever.
- Your wound itches severely.
- Your dressing changes are often painful or bleeding often occurs.
- You have diarrhea.
- You have a sore throat.
- You have a rash around the dressing or anywhere else on your body.
- You feel nauseous.
- You feel dizzy or weak.
- The VAC machine has been off for more than 2 hours.

HOW DO I GET READY TO GO HOME WITH A PUMP?

A trained caregiver will talk to you and answer your questions about your vacuum-assisted closure therapy before you go home. He or she will explain what to expect. A caregiver will come to your home to apply the pump and care for your wound. The at-home caregiver will be available for questions and will come back for the scheduled dressing changes, usually every 48-72 hours (or more often for severely infected wounds). Your at-home caregiver will also come if you are having an unexpected problem. If you have questions or do not know what to do when you go home, talk to your healthcare provider.

This information is not intended to replace advice given to you by your health care provider. Make sure you discuss any questions you have with your health care provider.

Appendix 1: Vacuum-Assisted Closure Therapy Home Guide

Vacuum-assisted closure therapy (*VAC therapy*) is a device that helps wounds heal. It is used on wounds that cannot be closed with stitches. They often heal slowly. VAC therapy helps the wound stay clean and healthy while its edges slowly grow back together.

VAC therapy uses a bandage (*dressing*) that is made of foam. It is put inside the wound. Then, a drape is placed over the wound. This drape sticks to your skin (*adhesive*) to keep air out. A tube is hooked up to a small pump and is attached to the drape. The pump sucks fluid and germs from the wounds. It can also decrease and bad smell that comes from the wound.

RISKS AND COMPLICATIONS

VAC therapy is usually safe to use at home. Your skin may get sore from the adhesive drape. That is the most common problem. However, more serious problems can develop, such as:

- Bleeding. This can happen if the dressing in the wound comes into contact with blood vessels. A little bleeding may occur when the dressing is being changed. This is normal now and then. Major bleeding can happen if a large blood vessel breaks. This is more likely if you are taking blood-thinning medicine. Emergency surgery may be needed.
- Infection. This can happen if the dressing has an air leak that is not repaired within a couple of hours.
- Dehydration. This can happen if the pump sucks out too much body fluid.

DRESSING CHANGES

Your dressing will have to be changed. Sometimes this is needed once a day. Other times, a dressing change must be done 3 times a week. How often you change your dressing will depend on what your wound is like. A trained caregiver will most likely change the dressing. However, a family member or friend may be trained to change the dressing. Below are steps to change a dressing in order to prevent an infection. The steps apply to you or the person that changes your dressing.

- Wash your hands with soap and water before and after each dressing change.
- Wear gloves and protective clothing. This may include eye protection.
- **Do not** allow anyone to change your dressing if they have an infection or a skin condition. Even a small cut can be a problem.

To change the dressing:

- Turn off the pump.

- Take off the adhesive drape.
- Disconnect the tube from the dressing.
- Take out the dressing that is inside the wound. If the dressing sticks, use a germ-free (*sterile*), saltwater solution to wet the dressing. This helps it come out more easily. If it hurts when the dressing is changed, take pain medicine 30 minutes before the dressing change.
- Cleanse the wound with normal saline or sterile water.
- Apply a skin barrier film to the skin that will be covered with the drape. This will protect the skin.
- Put a new dressing into the wound.
- Apply a new drape and tube.
- Replace the container in the pump that collects fluid if it is full. Do this at least once per week.
- Turn the pump back on.
- Your doctor will decide what setting of suction is best. **Do not** change the settings on the machine without talking to your nurse or doctor.

HOME CARE INSTRUCTIONS

- The VAC pump has an alarm. It goes off if there are any problems such as a leak.
 - Ask your caregiver what to do if the alarm goes off.
 - Call your caregiver right away if the alarm goes off and you cannot fix the problem.
- **Do not** turn off the pump for more than 2 hours.
- Check your wound carefully at each dressing change for signs of infection. Watch for redness, swelling, or any fluid leaking from the wound. If you develop an infection:
 - you may have to stop VAC therapy.
 - The wound will need to be cleaned and washed out.
 - You will have to take antibiotic medicine.
- Ask your caregiver what activities you should or should not do while you are getting VAC therapy. This will depend on your particular wound.
- Ask if it is okay to turn off the pump so you can take a shower. If it is okay, make sure the wound is covered with plastic. The wound area **must** stay dry.
- Drink enough fluids to keep your urine clear or pale yellow.
- Eat foods that contain a lot of protein. Examples are meat, poultry, seafood, eggs, nuts, beans, and peas. Protein can help your wound heal.

SEEK MEDICAL CARE IF:

- Your wound itches or hurts.

- Dressing changes are often painful or bleeding often occurs.
- You have a headache.
- You have diarrhea.
- You have a sore throat.
- You have a rash.
- You feel nauseous.
- You feel dizzy or weak.

SEEK IMMEDIATE MEDICAL CARE IF:

- You have very bad pain.
- You have bleeding that will not stop.
- Your wound smells bad.
- You have redness, swelling, or fluid leaking from your wound.
- Your alarm goes off and you do not know what to do.
- You have a fever.

Appendix 2: Guide for Post-Cesarean Women with VAC Therapy

These discharge instructions provide you with general information on cesarean section and caring for your wound vac after you leave the hospital. Your caregiver may give you *specific* instructions.

Please read these instructions and refer to them in the next few weeks. If you have any questions regarding these instructions, you may call the nursing unit. If you have any problems after discharge, please call your doctor. If you are unable to reach your doctor, you should seek help at the nearest Emergency Department.

Vacuum-assisted closure (VAC) therapy uses a device that removes fluid and germs from wounds to help them heal. It is used on wounds that cannot be closed with stitches. They often heal slowly. Vacuum-assisted therapy helps the wound stay clean and healthy while the open wound slowly grows back together.

Vacuum-assisted closure therapy uses a bandage (*dressing*) that is made of foam. It is put inside the wound. Then, a drape is placed over the wound. The drape sticks to your skin to keep air out, and to protect the wound. A tube is hooked up to a small pump and is attached to the drape. The pump sucks out the fluid and germs. Vacuum-assisted closure therapy can also help reduce the bad smell that comes from the wound.

HOW DOES IT WORK?

The vacuum pump pulls fluid through the foam dressing. The dressing may wrinkle during this process. The fluid goes into the tube and away from the wound. The fluid then goes into a container. The fluid in the container must be replaced if it is full or at least once a week, even if the container is not full. The pulling from the pump helps to close the wound and bring better circulation to the wound area. The foam dressing covers and protects the wound. It helps your wound heal faster.

RISKS AND COMPLICATIONS

VAC therapy is usually safe to use at home. Your skin may get sore from the adhesive drape. That is the most common problem. However, more serious problems can develop, such as:

- Bleeding. This can happen if the dressing in the wound comes into contact with blood vessels. A little bleeding may occur when the dressing is being changed. This is normal now and then. Major bleeding can happen if a large blood vessel breaks. This is more likely if you are taking blood-thinning medicine. Emergency surgery may be needed.
- Infection. This can happen if the dressing has an air leak that is not repaired within a couple of hours.
- Dehydration. This can happen if the pump sucks out too much body fluid.

HOW DOES IT FEEL?

- You might feel a little pulling when the pump is on.

- You might also feel a mild vibrating sensation.
- You might feel some discomfort when the dressing is taken off.

ACTIVITY

- Rest, as much as possible the first two weeks at home
- You may move around with your wound vac. It has a backup battery which is used when the machine is not plugged in, as long as the battery is working, you can move freely.
- Limit your housework and social activity. Increase your activity gradually as your strength returns. Do not climb stairs more than two or three times a day.
- Do not lift anything heavier than your baby.
- Follow your doctor's instructions about driving a car.
- Limit wearing support panties or control-top hose, since relying on your own muscles helps strengthen them.

NUTRITION

- You may return to your usual diet.
- Drink 6 to 8 glasses of fluid a day.
- Eat a well-balanced diet, including portions of food from the milk, fruit, vegetable, and bread groups. Also eat foods that contain a lot of protein. Examples are meat, poultry, seafood, eggs, nuts, beans, and peas. Protein can help your wound heal.

ELIMINATION

- You should return to your usual bowel function. If constipation is a problem, you may take a mild laxative such as Milk of Magnesia. Gradually add more fruit, vegetable, and bran to your diet, and increase your fluids.

HYGIENE

- You can wash or shower with the dressing. **Do not** do anything that would submerge your wound in water, such as bathe, swim, or use a hot tub. **Do not** take the pump into the shower. Make sure the wound dressing is protected and covered with plastic. The wound area must stay dry.

VAGINAL CARE

- You may have vaginal discharge for up to 6 weeks. If the vaginal discharge becomes bright red, foul smelling, heavy in amount, or if you have burning or frequency on urination, call your caregiver.

SEXUAL INTERCOURSE

- It is best to follow your caregiver's advice about when you may safely resume sexual intercourse. Most women can begin to have intercourse two to three weeks after their baby's birth.

- You can become pregnant before you have a period. If you do resume sexual intercourse, you must use birth control if you do not want to become pregnant right away.

BREAST CARE

If you are not breastfeeding and your breasts become tender, hard, or leak milk, you may wear a firm fitting bra and apply ice to the breasts. If you are breastfeeding, call your caregiver if you have breast pain, flu-like *symptoms* (problems), fever, or hardness and reddening of your breasts.

POSTPARTUM BLUES

After the excitement of having the baby goes away, you may commonly have a period of low spirits or “blues”. This may be caused by the changing hormone levels in your body. You may want to contact your caregiver if this is worrisome.

WHAT ARE SOME THINGS I MUST KNOW?

- **Do not** turn off the pump yourself, unless instructed to do so by your healthcare provider, such as for bathing.
- **Do not** take off the dressing yourself, unless instructed to do so by your caregiver.
- Use anti-itch medicine as directed by your health care provider. The wound may itch when it is healing. **Do not** pick or scratch at the wound.
- **Do not** turn off the pump for more than 2 hours. If the pump is off for more than 2 hours, a nurse must change your dressing.
- Check frequently that the machine is on, that the machine indicates the therapy is on, and that all clamps are open.

WHEN SHOULD I CALL FOR HELP?

- You have difficulty breathing.
- You have a fever. If your temperature is 101°F (38.3°C) or above even once, or it is 100.4°F (38°C) two times in a four hour period, call your doctor. The fever may indicate infection.
- You have severe pain. You may still have mild discomfort. You may have received a prescription for pain medicine or you may use an “over the counter” pain medicine. If the pain is not relieved by your medicine or becomes worse, call your caregiver.
- You have bleeding that will not stop.
- You have diarrhea.
- You have a sore throat.
- You feel nauseous.
- You feel dizzy or weak.
- Your wound smells bad.
- You have redness, swelling, or fluid leaking from your wound.
- Your alarm goes off and you do not know what to do.
- Your wound itches severely.
- Your dressing changes are often painful or bleeding often occurs.
- You have a rash around the dressing or anywhere else on your body.

- The VAC machine has been off for more than 2 hours.

DRESSING CHANGES

Your dressing will have to be changed. Sometimes this is needed once a day. Other times, a dressing change must be done 3 times a week. How often you change your dressing will depend on what your wound is like. Below are steps to change a dressing in order to prevent an infection. The steps apply to you or a friend/family member that changes your dressing.

- Wash your hands with soap and water before and after each dressing change.
- Wear gloves and protective clothing. This may include eye protection.
- **Do not** allow anyone to change your dressing if they have an infection or a skin condition. Even a small cut can be a problem.

To change the dressing:

- Turn off the pump.
- Take off the adhesive drape.
- Disconnect the tube from the dressing.
- Take out the dressing that is inside the wound. If the dressing sticks, use a germ-free (*sterile*), saltwater solution to wet the dressing. This helps it come out more easily. If it hurts when the dressing is changed, take pain medicine 30 minutes before the dressing change.
- Cleanse the wound with normal saline or sterile water.
- Apply a skin barrier film to the skin that will be covered with the drape. This will protect the skin.
- Put a new dressing into the wound.
- Apply a new drape and tube.
- Replace the container in the pump that collects fluid if it is full. Do this at least once per week.
- Turn the pump back on.
- Your doctor will decide what setting of suction is best. **Do not** change the settings on the machine without talking to your nurse or doctor.

HOME CARE INSTRUCTIONS

- The VAC pump has an alarm. It goes off if there are any problems such as a leak.
 - Ask your caregiver what to do if the alarm goes off.
 - Call your caregiver right away if the alarm goes off and you cannot fix the problem.
- **Do not** turn off the pump for more than 2 hours.
- Check your wound carefully at each dressing change for signs of infection. Watch for redness, swelling, or any fluid leaking from the wound. If you develop an infection:
 - You may have to stop VAC therapy.
 - The wound will need to be cleaned and washed out.
 - You will have to take antibiotic medicine.

- Ask your caregiver what activities you should or should not do while you are getting VAC therapy. This will depend on your particular wound.
- Ask if it is okay to turn off the pump so you can take a shower. If it is okay, make sure the wound is covered with plastic. The wound area **must** stay dry.
- Drink enough fluids to keep your urine clear or pale yellow.
- Eat foods that contain a lot of protein. Examples are meat, poultry, seafood, eggs, nuts, beans, and peas. Protein can help your wound heal.

Make sure you discuss any questions you have with your health care provider.