



PATIENT INFORMATION MANUAL

YOUR LIFE IN A HALO MADE EASIER.

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NOTICE!

A halo brace is a serious matter. Although this booklet attempts to cover many areas of importance, it cannot provide solutions for all situations or all patients. For this reason, it is important that you communicate with your surgeon when you are unsure of any procedure.

Advice given in this booklet does not supercede specific orders of your physician.

IMPORTANT PHONE NUMBERS

Hospital: _____

Phone: _____

Neurosurgeon: _____

Phone: _____

Orthopaedic Surgeon: _____

Phone: _____

Orthotist: _____

Phone: _____

Family Doctor: _____

Phone: _____

SPECIAL INSTRUCTIONS: _____

PHYSICIAN: _____

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INTRODUCTION

Your doctor has determined that the best treatment for your spine condition is the use of a halo immobilization brace. Whatever the reason for your condition, your halo brace will get you off your back and on the road to recovery.

For the next several weeks, you will have to adapt to a different lifestyle that revolves around your immobilization device. This booklet has been written especially for you to help guide you through this transition and help you along your road to recovery as comfortably as possible.

The ReSolve® Halo System

A halo brace is used to immobilize your neck. Designed to be an external fixation device for the cervical and upper thoracic spine, the halo brace serves as a rigid frame that holds the head in a fixed position. It also alleviates much of the burden of supporting the head from the neck.

The ReSolve Halo System represents a tested and proven method of immobilizing the cervical spine externally. It also provides a much more comfortable alternative to plaster casting techniques used in the past. The main advantage of the halo brace, however, is that it may permit you to be mobile sooner than if your treatment required a long period of bed restriction. Another key advantage of the halo brace is that it gives the physician an alternative to surgery in the delicate cervical spine area.

The main parts of the halo are shown on the diagram on page 2. The halo is divided into four main sections: pins, ring, superstructure and vest.

RING

The halo ring serves as an anchor point for the superstructure at the head. The ring is rigidly fixed to the skull with pins.

PINS

The skull pins serve as the main points of fixation for the halo ring. They are tightened against your head at a pressure great enough to stabilize the ring. Pin pressure is not great enough, however, to allow the pins to penetrate your skull.

SUPERSTRUCTURE

The superstructure provides a rigid framework between the ring and the vest, thereby immobilizing the neck.

VEST

The interlocking vest is designed to fit snugly against the body, especially at the waist. This is necessary in order to insure that the correct spinal alignment is maintained as it was set by the doctor. Loosening of the vest, or of any of its components, may result in a loss of this fragile alignment or may lead to reinjury.



HALO MAINTENANCE AND ADJUSTMENTS

Halo adjustments are an essential and normal procedure. The initial adjustments usually take place in the hospital within the first 48 hours after the application. Thereafter, adjustments should be made on an “as needed” basis at regular intervals. It is recommended that you see your doctor at least once every two weeks for the duration of your treatment period, unless otherwise indicated. It is also recommended that you take with you all of the tools provided with your halo to the doctor’s office for each visit. **NEVER ATTEMPT ANY ADJUSTMENTS TO YOUR HALO DEVICE WITHOUT CONSULTING YOUR PHYSICIAN FIRST.**

Pins

After the pins are originally placed in position, they will have to be retightened within the first 24-48 hours. After this adjustment they will be checked regularly by your doctor and retightened as needed. If you notice that a pin is loose, avoid excessive movement and alert your physician.



Vest

The vest will be adjusted to fit you when it is first put on in the hospital. If you gain or lose a considerable amount of weight, or if you feel any uncomfortable pressure, it will need to be readjusted. Do not make any adjustments to the vest yourself without consulting with your physician first.

Superstructure

If you notice any loose nuts or bolts within the metal framework of your brace, or if you hear a “clicking” sound at any of the articulations, call your doctor or orthotist for assistance. Avoid excessive movement until the connection is retightened.

ADAPTING TO THE HALO BRACE

Although the halo device allows you the opportunity to be mobile during your recovery, it may at times be difficult to adapt to the device, especially during the first few days. You will have to learn to adjust your activities to accommodate for the fact that you cannot move your head. Although your peripheral vision will gradually improve, you will find that it is necessary to move your entire body and not just your head to see properly.

Although it is necessary to learn to do as much as possible for yourself, it is more important to ask for help when you need it. One of the single most important things to avoid is falling. It is also important to avoid receiving bumps and jars to the halo.

People will be extremely interested in what you are wearing and they may have a tendency to stare at you but they will also give you a wide berth to pass. However, you should try to avoid crowded areas.



HANDLING THE CURIOUS

As you step out into the world with your new halo brace you will be aware of people staring, whispering and sometimes commenting. You may be approached with such questions as, “What’s it like in outer space?” “How’s the reception?” or “Do you have to sleep in that?!” You may want to develop your own come backs to such questions. The best approach we have had reported is to cut them off before they begin by looking directly at the people you are passing and smile. This tends to disarm them.

It is important to realize that you, as well as the people around you, need time to acclimate to your halo. Concerned that you are in pain and not able to handle watching you hurt, some friends and family members may initially stay away. Try not to take it personally, in time they will adjust and come back.

RECREATIONAL ACTIVITY AND EXERCISE

Although you may feel self-conscious, it is important that you try to maintain as much of a normal lifestyle as possible. Ask your physician whether you may return to your normal schedule. Recreational activity and exercise will have a positive effect on your recovery process as well as on your mental attitude.

If you are able, taking a daily walk will not only help you stay in shape, it will help you maintain a positive attitude. Other exercises are possible; however, contact your doctor before proceeding further. Avoid impact exercises involving running or jumping. Also avoid weight lifting or lifting heavy objects.

Now may be a good time to learn to play the piano or make up for lost practice time. Watch TV, surf the Internet, straighten out your closets and drawers, or write letters.

Another excellent idea is to take a trip, or visit friends and relatives, doctor permitting. Always be sure to have your doctor's approval and recommendation for a substitute physician in the area you will be visiting. Always take a friend along.



Try not to become discouraged if you cannot be as active as you would like to be. Some days may be easier than others and sometimes, as everyone does, you will have a bad day. Perhaps you are tired from doing too much the day before, you have picked up a slight cold, or you are simply depressed. Although, these are normal, “every day” occurrences for most people, to you they may seem magnified. This is a natural response. However, throughout your treatment you should try to remain focused on positive things and stay as active as possible.

CAUTION: If, while active, you experience pain, stop and rest. If pain persists, or if you notice any of the caution signs outlined in this manual, contact your physician immediately.

PERSONAL HYGIENE

Good hygiene is essential to your well-being during your recuperation.

Whether in the hospital or at home, you will need assistance in your daily hygiene.

PIN SITE CARE

Pin sites should be cared for daily. There are several methods of pin site care. Follow your physician's directions carefully. Avoid “digging” at the crust that forms around the pin site. Remove it gently with soap and water and washcloth or cotton swab. It is very important to keep the pin sites clean and dry. Use a different area of the washcloth or a different cotton swab at each pin site to avoid the possibility of cross-contamination.

CAUTION: If you notice a fluid discharge, or experience a “tight” feeling, a “clicking” sound or an increase in pain at the pin sites, it usually means the pins have loosened. Avoid excessive movement and contact your physician immediately.

VEST HYGIENE PROCEDURE

Before proceeding with the hygiene procedures listed here, you should check with your physician. He/she will recommend the procedure that is best suited to your individual needs. Above all you should try to keep your skin and the liner under your vest as clean and dry as possible. Try to avoid staying in hot, humid or dirty environments for long periods of time.

If your liner does become dirty, it is possible to get a replacement liner. A clean liner may be fitted in the doctor's office. However, there will most likely be an extra charge for the replacement liner. Instructions for cleaning the soiled liners are found in the Appendix of this manual.

Once a day, the skin under your vest should be cleaned and checked for signs or symptoms of skin breakdown. Do not loosen or remove any part of the superstructure or open the plastic buckles.

Your helper may use a flashlight to see underneath the vest at home. If redness, discoloration or skin breakdown appears, contact your clinician immediately.

If within the first few days you are in your halo vest you notice a rash developing under your vest (especially where your skin is in direct contact with the liner) you may be experiencing an allergic reaction to the lambswool. Although this is a rare occurrence, if you suspect that this may be happening, contact your doctor as soon as possible. Either your doctor or your orthotist will replace your lambswool liner with a synthetic one.

BATHING

Washing under your vest can be accomplished with a damp washcloth or towel. Attach a string to the opposite corners of the wash cloth and pass under the vest, pull back and forth in a sawing motion in the chest area as well as your back. Occasionally, alcohol may be used to dampen the cloth in place of water. This will remove excess oil and keep the skin dry. Never use lotion, powder or soap under your vest. This may cause the liner to become matted and uncomfortable and may lead to skin problems. There may be days during which a helper is not available. On these days, it is important for you to continue your personal hygiene on your own.

It is equally important to keep that part of your body which is not covered by your halo vest clean. This can be easily accomplished taking a sponge bath, using a hand held shower head and a shower chair, or by taking a bath in shallow water (4-6 inches deep), being careful not to get your liner wet. You may want to use a large plastic bag to cover the bottom of the vest while you bathe. Always put down a non-slip rubber mat in the tub, it is easy to lose your balance on a wet surface. If your liner does get wet, you may dry it with a hair dryer on a cool setting.

We recommend that you do not shower in your halo. The liner will absorb water and become very heavy. In addition, the liner will not dry easily and skin problems may develop as a result.

SHAMPOOING

Of course, short hair is easier to manage than long hair; however, shampooing can be managed by carefully following these steps:

1. Run a towel through the upright bars of your halo and tuck it in the vest to keep the liner from becoming wet. You may want to use a second towel held tightly around your neck as an additional precaution against getting water in your vest.
2. Place a towel over the edge of the tub for padding and rest your elbows for support.
3. Using a spray attachment, wet your hair with warm water. (A pitcher of water may be used in lieu of a hose.)
4. Apply shampoo, working it “gently” through your hair.
5. Rinse thoroughly.
6. Be certain to rinse pin sites well and to dry them completely.
7. A blow dryer may be used, but be careful to avoid heating the pin sites. Use the cool setting. Hot rollers may also be used, but it may be difficult to maneuver a curling iron around the superstructure.

If you are not mobile enough to lean over a sink or tub, lay on your bed with your head positioned over the edge of the bed. Use the same procedure as for the sink or tub, but utilize a bucket or portable basin to collect the water.

Never use any chemicals on your hair while you are in the halo. Hair colors, dyes and permanent waves are not permitted, neither are hairspray or conditioner. These chemicals may cause an infection of the pin sites.



HELPFUL HINTS

BALANCE

Initially, it will be necessary to overcome the “top heavy” effect experienced with the halo brace. The halo adds additional weight to your head and neck. Therefore, what were once reflex actions, such as getting in and out of a car, and putting on a pair of pants are now more difficult and must be practiced. Until you have become accustomed to your halo, make certain that you have something to hold onto or to brace yourself with when you perform these activities. It may be helpful for you to hold onto the upright bars of the device when you are being transported (to avoid being jolted around). It may also be more comfortable to hold onto the upright bars when you are lying down or sitting for extended periods. You may need some assistance with these everyday activities at first.



SLEEPING

It is normal for you to be sleeping longer periods. Your body uses up much more energy now than before and requires more rest to recuperate. Additional energy is also required just to move about in the halo device.

Be patient, it may take a while to adjust to sleeping in the halo brace. In order to reduce the possibility of pin loosening, we advise you not to rest the back of your ring on anything. We recommend the use of pillows or foam wedges behind your back and a pillow behind your knees for support and comfort while you sleep. Foam wedges may be purchased at any home healthcare supply store. Also, a rolled towel behind your neck will lessen the feeling of being suspended in “space.” However, you must avoid jamming pillows or towels against the neck and between the bars.

It is important to change your position during the night to avoid the development of pressure areas. You may find it helpful to use pillows behind your back when lying on your side for additional support and comfort.

CLOTHING

Some of your clothing will need to be modified to accommodate your halo brace. It may be necessary to borrow or purchase some inexpensive items in a larger than normal size to fit over the brace. The most important requirement is that the clothing has a large enough neck opening to go over the brace. Pants, shorts or skirts should not require any alterations.

Jackets or sweat suits that button, zip or snap up the front are commonly worn over the halo vest. These items are comfortable, easy to put on and usually do not require alterations.

Your shoes should be a comfortable, sturdy, low-heeled style that is able to provide traction. A good pair of shoes reduces the likelihood of falling.

ITCHING

Be sure to use a blunt or rubber tipped object when scratching an itch under the vest to avoid breaking the skin.

ENTERING AND EXITING THE CAR

It is best to enter the car with another person watching to advise you of how much headroom you have. You will need more clearance now to avoid bumping the halo and the uprights. The easiest way of entering a car is to back into the seat with your buttocks, bring your head inside the vehicle and then swing your legs inward. To leave the car, bend so that the halo ring can clear, slide forward until your feet are firmly on the ground and then exit carefully. Be sure your head is clear of all obstacles before standing up.

SPECIAL NOTE: Always wear seatbelts.

Do not attempt to drive any vehicle while you are in the halo. Since you are unable to turn your head, you pose a threat to yourself and to other drivers.

SWALLOWING

This otherwise normal function will require some caution. When eating, take smaller bites and chew each bite thoroughly. Always eat in an upright position. If chewing becomes painful and if the pain persists, contact your doctor.

READING

Although it may be a bit difficult to read now, this is a good way to spend some of your time. The halo device forces you to look straight ahead while you read. Therefore, you may find it necessary to use a music stand or similar object to support your reading material at eye level. Because reading in this position is somewhat awkward, you may want to look into the use of prism glasses. Prism glasses may be purchased at most medical supply stores. They will allow you to read with reading materials on your lap.



PAIN

NECK PAIN

It is normal to experience some neck pain during the first few weeks you are in the halo, especially if you are active. In time, you should not be experiencing as much discomfort. However, if you do feel sudden or persistent neck pain, call your doctor immediately.

PINS

It is normal to experience some mild pain and discomfort at the pin sites for a few days after the application of the pins, especially when chewing or yawning. In general, after the initial pressure headache is relieved, you should not experience pain or discomfort at the pin sites. Sudden jolts or bumps to be halo, however, may cause momentary pain. Some pain may also be associated with coughing or sneezing.

If a pin site becomes unusually painful or tender, or if you notice any fluid discharge, it may be a signal that the pin has loosened or become infected. In the event of unusual pain or irritation, call your doctor. Pin loosening may also be indicated by a “tight” feeling or a “clicking” sound.

VEST PRESSURE

If you are experiencing any uncomfortable pressure of the vest against your skin, especially at locations of bony prominences (shoulder, shoulder blades, ribs, spine) or if you notice red areas under the vest, contact your doctor to have the vest readjusted. Do not let the symptoms continue. Areas of increased pressure, if left unchecked, may develop into painful pressure sores. Your clinician can use additional liner pieces to pad uncomfortable areas.

CAUTION SIGNS

It is extremely important that you follow all of your doctor’s directions with regard to the care of your pin sites. Minor discomfort is expected with the halo pins in place, however, any excessive pain at the pin sites should be reported to your doctor.

In order to avoid unnecessary complications, it is also very important to follow the correct daily hygiene procedure and to check the skin under your vest regularly. Always remember to get the proper amount of rest and don’t overdo any activity or overexert yourself. Try to avoid bumping into anything.

Contact your doctor IMMEDIATELY if you notice any of the following danger signals:

- **SUDDEN NECK PAIN**
- **EXCESSIVE DIFFICULTY IN EATING**
- **NUMBNESS OR WEAKNESS IN YOUR ARMS OR LEGS**
- **FLUID DRAINAGE AT THE PIN SITES**
- **OPEN SORES UNDER THE VEST**
- **CLICKING SOUNDS AT THE PIN SITES**
- **REDNESS AND/OR SWELLING AROUND THE PINS**
- **FEVER**

EMERGENCY PROCEDURES

PIN LOOSENING

In the event you should experience any unusual pain, hear a clicking noise or notice any fluid discharge at a pin site, avoid excessive movement and contact your doctor immediately.

HALO REMOVAL

Most patients must wear their halo for twelve weeks, depending on the severity of the condition and the patient's recuperative powers.

After the halo is removed there will be a period of adjustment and balance just as when the halo was first applied. Remember that the structure that was supporting your neck is being removed and, initially, it will be somewhat difficult to support the weight of your head. Your neck, back and shoulder area may ache as a result of inactivity while you were in the brace. Your head may feel numb and you may feel particularly apprehensive about being jarred by others. In addition, you may tire easily.

You will be required to wear a Miami J® Collar for several weeks after the halo has been removed. Most likely, you will also see a physical therapist to help you get your muscles back in shape. You must remain careful throughout the final stages of your treatment. However, before long you may be able to return to your prior lifestyle.

Once the pins are removed, you will need to mobilize the skin over your front pin sites. To loosen adhesions, promote healing and prevent scarring, massage each area vigorously 5 times a day for 3 minutes or 3 times a day for 5 minutes. This will help the pin sites to disappear quickly.



QUESTIONS FOR THE DOCTOR

Should you have any concerns, don't hesitate to ask your doctor. You may find it helpful to write down any questions you have at the time they occur to you. This way it will be easier for you to remember next time you go for an office visit. Doctors' offices and outpatient clinics are frequently very busy. It will help both you and your doctor if you arrive prepared with any questions you would like to ask.

The information contained in this booklet may only be improved with the help of patients such as yourself. The medical professionals providing your care will also welcome your input and be able to forward it on to the halo designers and manufacturers.

TIPS FOR FAMILY AND FRIENDS

Your loved one has gone through a great deal of trauma, both physically and emotionally. They will need a lot of caring and understanding. It is normal for small irritations to seem magnified to them. They will need help in understanding this.

With their new halo brace, although they are now able to be more active, their life has temporarily changed in many ways. For example, the patient's peripheral vision is limited because he/she cannot bend his/her head down. Be sure to keep the floor clear of objects which may get in the way and could potentially cause an accident.

In addition, halo patients cannot readily see what is behind them – unable to turn their head, they must turn their body around. Two small mirrors may be attached to the uprights to allow the patient to see on either side. Keep in mind, however, that this will obstruct normal vision to some extent. Try to protect the patient from sudden, unexpected noises which can result in a startled reaction. If the patient tries to turn too quickly, an injury may result.

It is important to maintain as much of a normal lifestyle as possible, but be sure to check with the patient's physician regarding which activities are permitted.

GLOSSARY OF TERMS

Cervical Spine: The first seven vertebrae of the spinal column which compose the neck region.

External Fixation Device: An immobilization device consisting of a rigid external frame which is transfixed to the body through wires or pins which are inserted through the skin and into bone. Commonly used to stabilize fractures.

Halo Ring: Elliptical ring positioned around the head and rigidly fixed to the head with the skull pins.

Liner, Inner: Padding of vest typically made from Lambswool or Kodel.

Occiput: The base of the skull.

Skull Pins: Pins threaded through the halo ring which serve to hold the halo ring in place by pressure exerted against the skull.

Skin Breakdown: Deteriorating skin condition similar to bed sores or decubitus ulcers possibly resulting in infection.

Shower Chair: Chair specifically designed to expedite personal hygiene, available from most home healthcare stores.

Superstructure: Rigid framework connecting the halo ring to the vest. Positioning of the head may be controlled through the superstructure.

Thoracic Spine: The middle section of the spinal column, composed of twelve thoracic vertebrae.

Vest: Plastic shell worn on the body that serves as an anchor point for the superstructure.

APPENDIX

INSTRUCTIONS FOR CLEANING THE VEST LINER

If you have received a replacement liner for your vest at the doctor's office, you may follow these instructions for cleaning the soiled liner.

Real lambswool liner – soak in cold water in a mild detergent (such as Woolite) for several hours. Machine wash using the gentle cycle and cold water. Do not use bleach and be sure to rinse thoroughly. Repeat the process if the liner is badly soiled. Air-dry the liner on a drying rack. Do not use heat or direct sunlight to dry a lambswool liner. Heat will cause the natural skin to dry out and become brittle. When the liner is dry, store the two pieces flat or rolled loosely until the next time you want your liner changed.

Artificial lambswool (Kodel polyester fleece) – treat as above, except that a small amount of bleach may be added to the soak. Air or machine dry (low heat).

Note: Additional new liners may be purchased through your hospital or brace shop (usually through Central Supply). Inquire with your nurses before leaving the hospital, or your doctor's office after discharge.

NOTES