



## CHAPTER 9

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# POST-OPERATIVE CARE



FOLLOWING SURGERY THE PATIENT IS TRANSFERRED FROM OR TO PACU BY TRAINED PERSONNEL. FLOW-SHEETS USUALLY VARY FROM ONE DEPARTMENT TO THE NEXT. FOLLOW YOUR DEPARTMENT'S INSTRUCTIONS FOR ASSESSMENT AND DOCUMENTATION.

## A SAMPLE OF PATIENT ASSESSMENT AND DOCUMENTATION

### PACU FLOWSHEET INCLUDES:

ASSESSMENT AND DOCUMENTATION OF TEMP, BP, PULSE, RESPS, O2 SAT AS ORDERED. EKG TRACING IS RECORDED.

ASSESSMENT AND DOCUMENTATION OF ALL BODY SYSTEMS ,DRAINS, DRESSINGS ETC.

GCS ASSESSMENT AND DOCUMENTATION AS ORDERED.

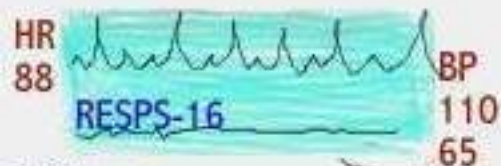


CORRECTION OF BLOOD GLUCOSE MAY BE ORDERED.

I/O - ALL IV FLUIDS AND URINARY OUTPUT INCLUDING DURING SURGERY) IS RECORDED.

CORRECTION OF LAB VALUES LIKE POTASSIUM, SODIUM OR MAGNESIUM MAY BE NECESSARY.

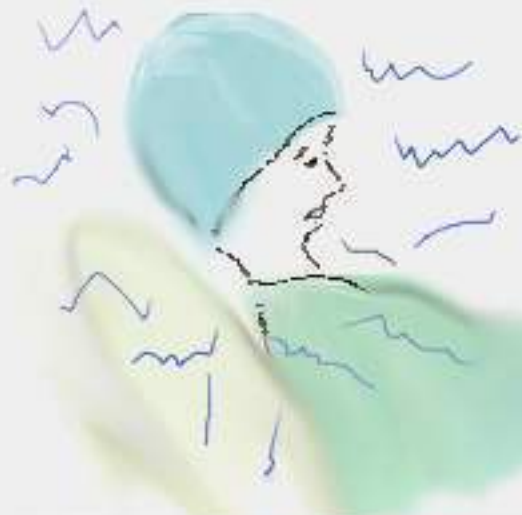
WHEN THE PATIENT IS CONSIDERED STABLE FOR DISCHARGE FROM PACU, THE ANESTHETIST SIGNS THE DISCHARGE ORDERS AND THE PATIENT IS TRANSFERRED TO THE APPROPRIATE UNIT. GOOD POSTOPERATIVE NURSING CARE SHOULD BE CONTINUED THROUGHOUT THE PATIENT'S HOSPITAL STAY.



## POST ANESTHESIA CARE UNIT

TEMP 95.0 F

This patient has just arrived in PACU. His core temperature 95F. He is hypothermic.



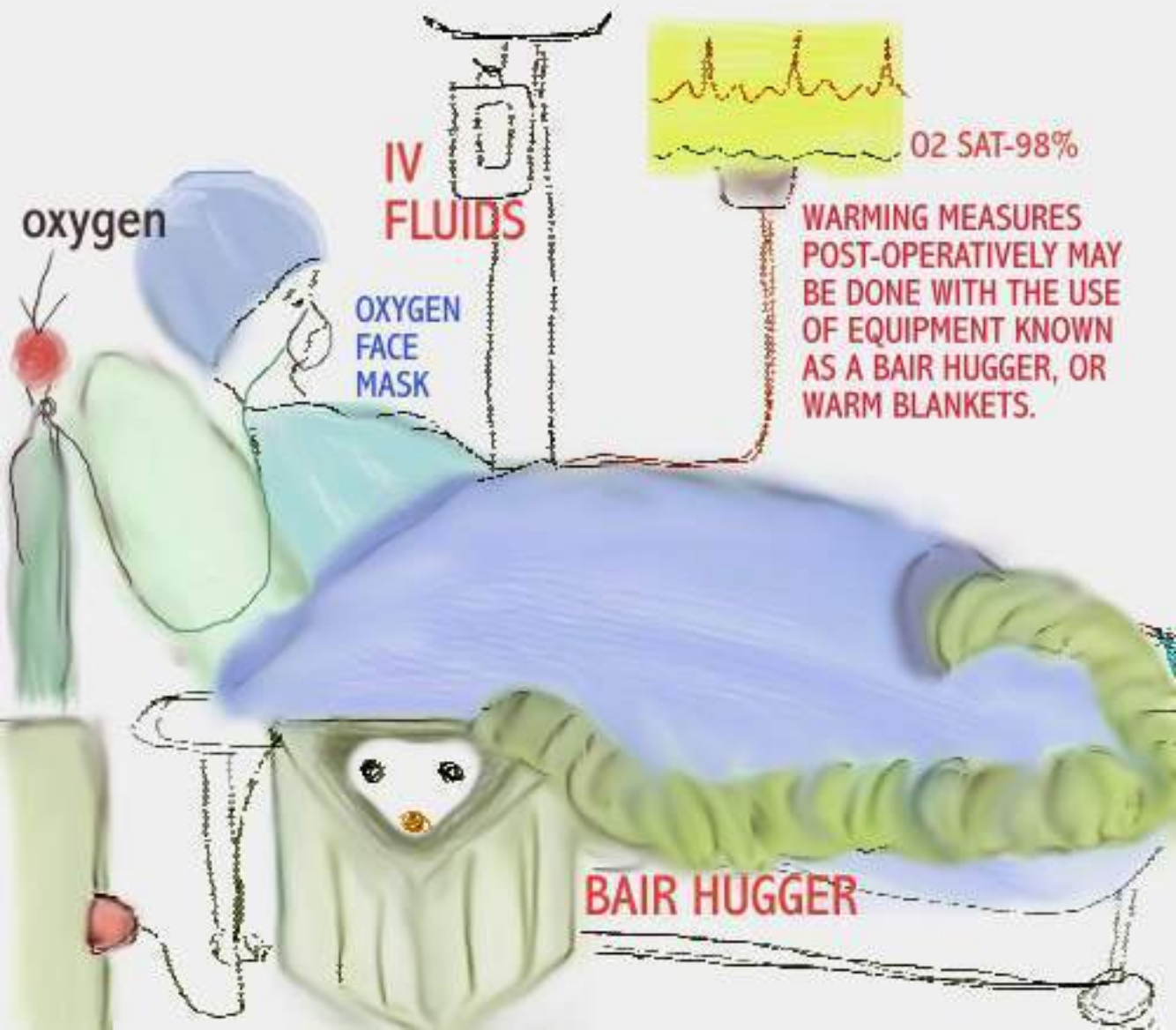
He is also at risk for a cardiac event, he is not using any oxygen.

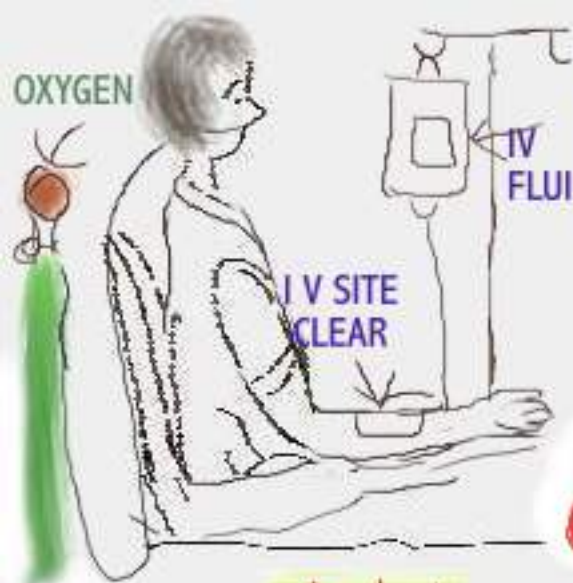
ASYSTOLE



Hypothermia increases the body's needs for oxygen. A lethal cardiac arrhythmia such as asystole may result. A patient who has a previous cardiac history is at great risk.

# POST ANESTHESIA CARE UNIT





## AIRWAY MANAGEMENT ON ARRIVAL IN PACU

ALWAYS MAINTAIN A PATENT AIRWAY.  
POSITION HEAD OF BED FOR COMFORT.

ABGS (ARTERIAL BLOOD GASES)  
MAY NEED TO BE DONE, TO CORRECT  
HYPOXIA.

A VENTILATED PATIENT WILL  
REQUIRE SUCTIONING TO KEEP  
THE AIRWAY CLEAR.

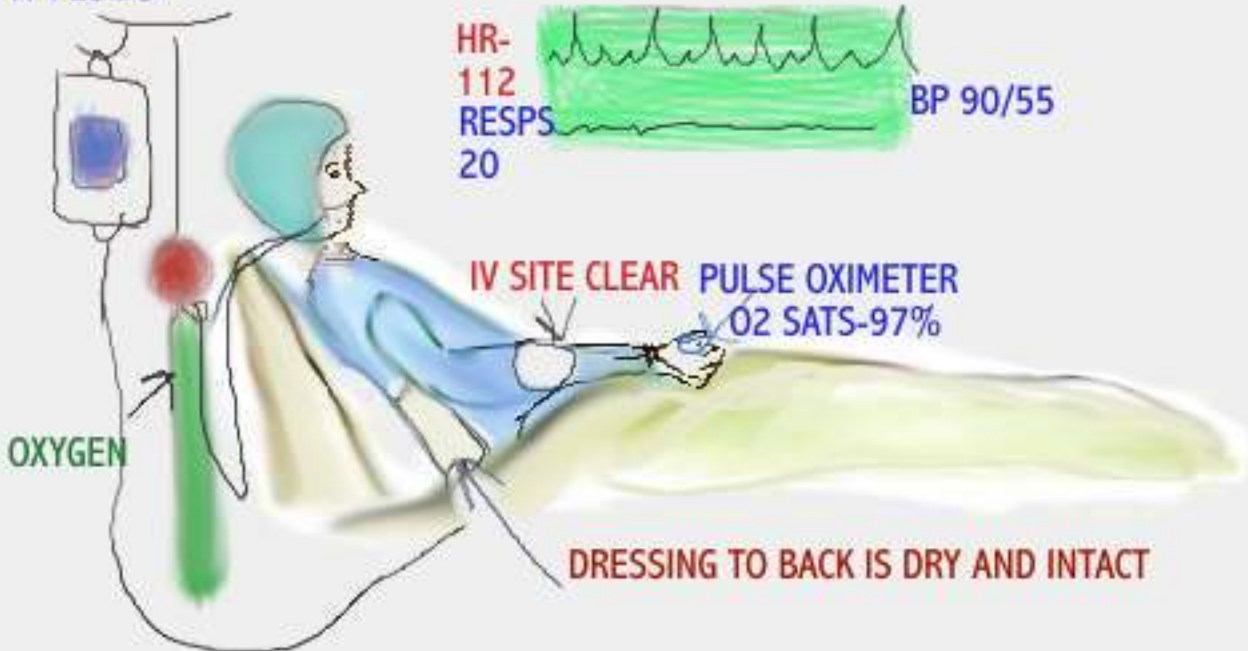
MUCOUS PLUGS CAN BLOCK THE AIRWAY  
AND LEAD TO HYPOXIA.

ALWAYS MONITOR AND RECORD O<sub>2</sub>  
SATURATION.

HYPOXIA- PATIENTS WHO HAVE A PRIOR HISTORY OF RESPIRATORY PROBLEMS, MAY NOT BE EXTUBATED FOLLOWING OR. THEY MAY REQUIRE VENTILATORY SUPPORT POST-ANESTHESIA, IN ORDER TO PREVENT HYPOXIA.  
RESPIRATORY TREATMENTS ARE SOMETIMES ORDERED BY THE DOCTOR AND IS GIVEN BY THE RESPIRATORY THERAPIST.

## EARLY SIGNS OF DEHYDRATION

IV FLUIDS



THE ABOVE PATIENT HAS JUST ARRIVED IN PACU FOLLOWING BACK SURGERY. SHE IS AWAKE, ALERT AND ORIENTED. SHE IS POSITIONED PER MD ORDERS.

HOWEVER, SHE IS BEGINNING TO SHOW THE EARLY SIGNS OF DEHYDRATION:  
- TACHYCARDIA AND HYPOTENSION.

EVENTUALLY, HER URINARY OUTPUT WILL DECREASE BECAUSE OF LACK OF FLUID VOLUME.

WHEN THE WARNING SIGNS OF DEHYDRATION ARE DETECTED, IT IS IMPORTANT TO DOCUMENT FINDINGS AND NOTIFY MD AS SOON AS POSSIBLE.

# POST-OP BRAIN SURGERY

Josh how many fingers do you see?

Josh is in PACU post-op and is doing well. He follows commands.

Josh is a 35 year old male who had a (VP) ventriculo-peritoneal shunt inserted in surgery.

IV FLUIDS

OXYGEN

Josh wake up

Monitor neurological status closely. Document any changes and notify MD.

Josh is very lethargic.

OXYGEN

Malignant hyperthermia is considered to be a rare but, life-threatening condition.

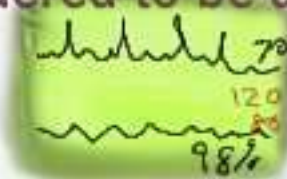
An Inherent quality in certain patients has been identified.

Certain inhaled anesthetic gases like Halothane, Desflurane, Sevoflurane and more may trigger an event.

Muscle relaxants such as Succinylcholine ( Anectine) may also be responsible.

This patient has  
**NO KNOWN  
ALLERGIES**

**MALIGNANT  
HYPERTHERMIA**

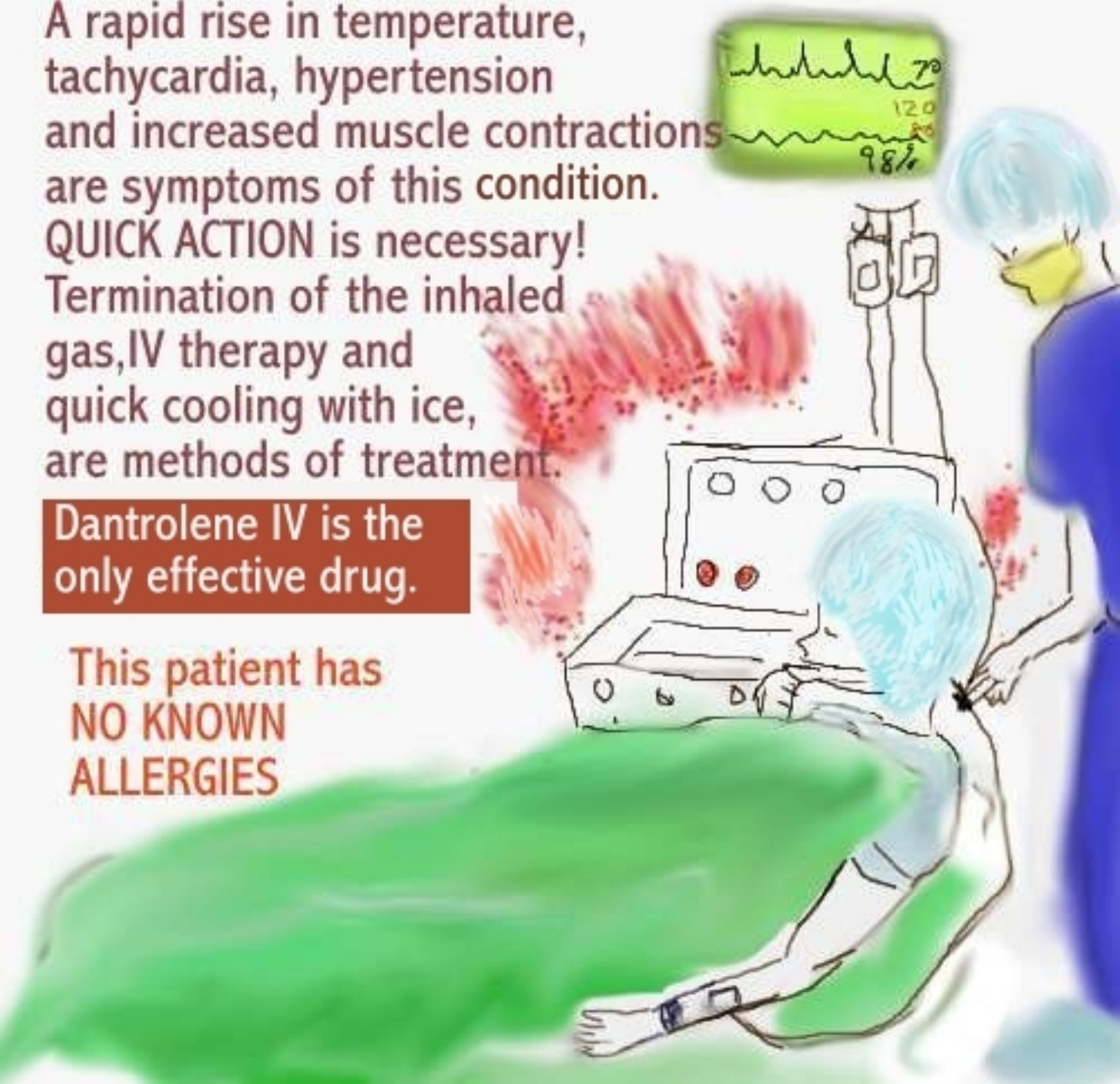


A rapid rise in temperature, tachycardia, hypertension and increased muscle contractions are symptoms of this condition.

**QUICK ACTION** is necessary! Termination of the inhaled gas, IV therapy and quick cooling with ice, are methods of treatment.

**Dantrolene IV is the only effective drug.**

**This patient has NO KNOWN ALLERGIES**





**EPIDURAL BLEED**

TIM WAS ON A LADDER AT WORK. HE LOST HIS BALANCE, AND FELL TO THE GROUND. HE HAS AN EPIDURAL BLEED. THIS OCCURS, WHEN BLEEDING IS PRESENT ABOVE THE DURA MATER, THE OUTERMOST COVERING OF THE BRAIN.



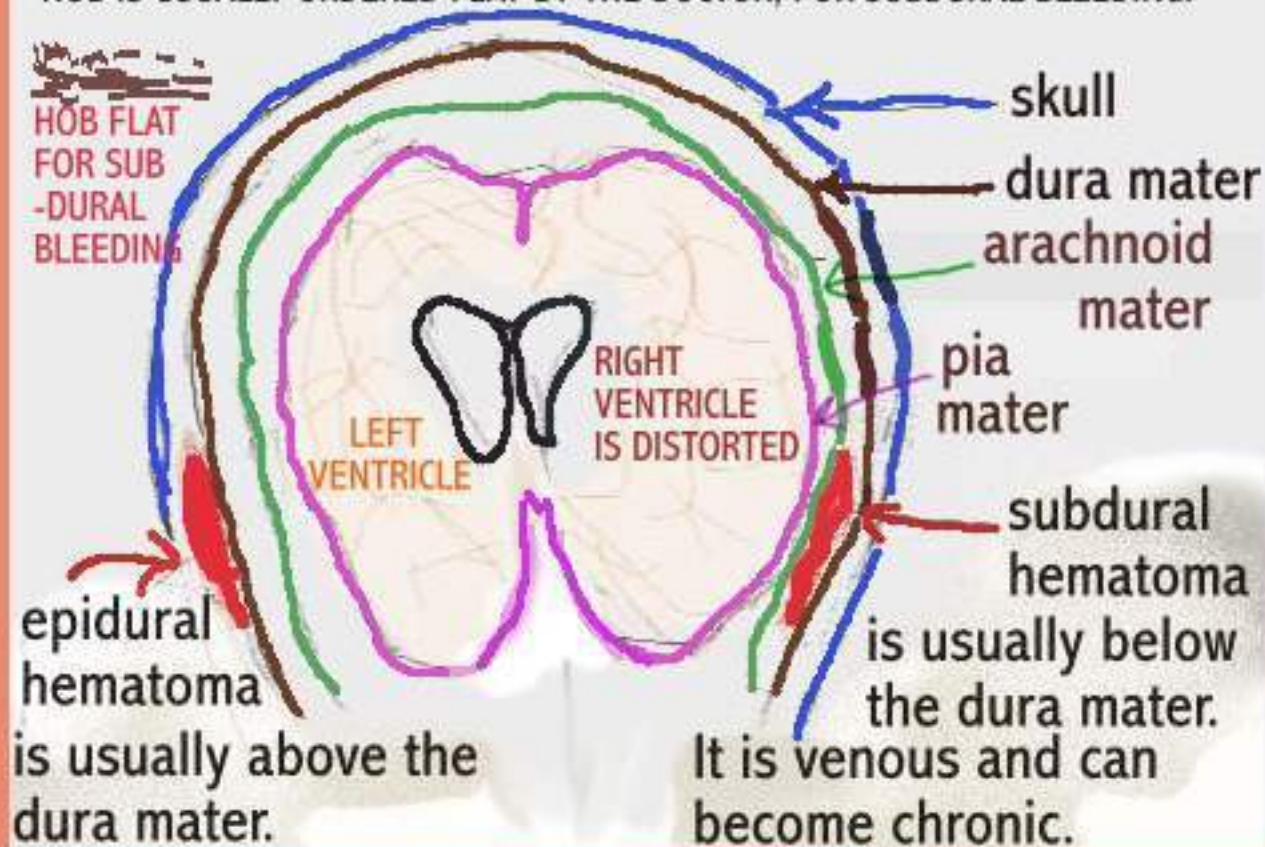
**SUBDURAL BLEED**

MRS. A HAS A HISTORY OF ALCOHOL INGESTION. SHE HAS FALLEN ON MANY OCCASIONS. TODAY, SHE LIES UNCONSCIOUS ON THE FLOOR. SHE HAS A SUBDURAL BLEED. THIS OCCURS UNDER THE DURA MATER, WHICH IS THE OUTERMOST COVERING OF THE BRAIN.



**SUBDURAL BLEED UNDER THE DURA MATER**

HOB IS USUALLY ORDERED FLAT BY THE DOCTOR, FOR SUBDURAL BLEEDING.



WHEN BLEEDING OCCURS, THE BLOOD THAT POOLS, FORMS A HEMATOMA. THE MENINGEAL ARTERY WHICH IS BEHIND THE EAR, IS A COMMON SITE FOR AN EPIDURAL BLEED. A SUBDURAL HEMATOMA FORMS UNDER THE DURA MATER AFTER TRAUMA. IT IS VENOUS IN NATURE. UNLESS OTHERWISE ORDERED BY THE DOCTOR, HOB SHOULD BE FLAT FOR A SUBDURAL BLEED.

EPIDURAL VS. SUBDURAL HEMATOMA

# BASAL SKULL FRACTURE

Q- WHAT IS A BASAL SKULL FRACTURE?

A- A BASAL SKULL FRACTURE IS A LINEAR FRACTURE TO THE BASE OF THE SKULL. IT IS USUALLY DIAGNOSED BY CT SCAN. X-RAY ONLY MAY BE DIFFICULT.

A TRAUMATIC EVENT SUCH AS A CAR ACCIDENT, FALLING FROM A SIGNIFICANT HEIGHT OR A DIRECT BLOW TO THE HEAD MAY RESULT IN SUCH A FRACTURE.



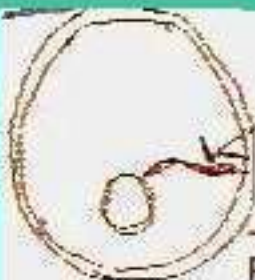
RACCOON EYES  
ECCHYMOSES-  
BLOOD  
ESCAPING  
INTO THE  
SOFT TISSUE.

SIGNS AND SYMPTOMS:- HEADACHE, ALTERED LEVEL OF CONSCIOUSNESS, MEMORY LOSS, BLURRY OR DOUBLE VISION, UNEQUAL PUPILS, FACIAL PARALYSIS AND SWELLING



A HALO SIGN MAY APPEAR ON THE PILLOW. THIS IS A YELLOW RING WITH BLOODY DRAINAGE FROM THE EAR OR NOSE, DUE TO A CSF LEAK.

SIGNS AND SYMPTOMS  
OF A BASAL SKULL  
FRACTURE



BASAL  
SKULL  
FRACTURE

-A LINEAR FRACTURE DIAGNOSED BY CT SCAN, BUT MAY BE DIFFICULT TO SEE ON X-RAY.

CT  
SCAN  
IS  
USED  
TO  
DETECT  
BASAL  
SKULL  
FRACTURE

RHINORRHEA-  
CSF  
LEAKING  
FROM NOSE



BATTLE'S  
SIGN  
ECCHYMOSES  
BEHIND THE  
EAR

OTORRHEA-  
CSF LEAKING  
FROM EAR

CRANIAL NERVES 7- (FACIAL) AND 8- (ACOUSTIC) MAY BECOME DAMAGED AS A RESULT OF THE INJURY.

# PARALYTIC ILEUS



AN ILEUS MAY DEVELOP IN THE POST-OPERATIVE PATIENT FOLLOWING ABDOMINAL SURGERY OR FROM THE USE OF NARCOTICS.

SYMPTOMS OF ABDOMINAL PAIN AND DISTENTION, ABSENT BOWEL SOUNDS, NAUSEA AND VOMITING ARE COMMONLY FOUND WITH AN ILEUS.

IT IS IMPORTANT TO ASSESS AND DOCUMENT FINDINGS. NOTIFY MD AS SOON AS POSSIBLE. A NASOGASTRIC TUBE IS USUALLY ORDERED TO RELIEVE THE DISTENTION.

Paralytic ileus is sometimes caused by abdominal surgery. It may also be caused by the use of narcotics. Air fills the bowel and does not pass out of the system. Bowel sounds are usually absent.

Abdominal pain, cramping, firmness, tenderness, nausea and vomiting are all signs and symptoms.

bowel distention

A hand-drawn diagram of the human digestive system. The esophagus, stomach, and small intestine are shown in a light blue color. The large intestine is shown in a light orange color. The cecum, the first part of the large intestine, is significantly enlarged and filled with a darker orange color, representing distention. A line points from the text 'bowel distention' to this enlarged cecum.

X- Ray and CT scan are done to confirm diagnosis. A nasogastric tube may have to be inserted.

# PCA ADMINISTRATION

PATIENT SHOULD BE ADVISED, THAT NO ONE ELSE SHOULD PRESS THE BUTTON.

I am so happy my sister was able to give me my pain medication when she visited

PCA PUMP

BUTTON THAT PATIENT PRESSES FOR PAIN MEDICATION.

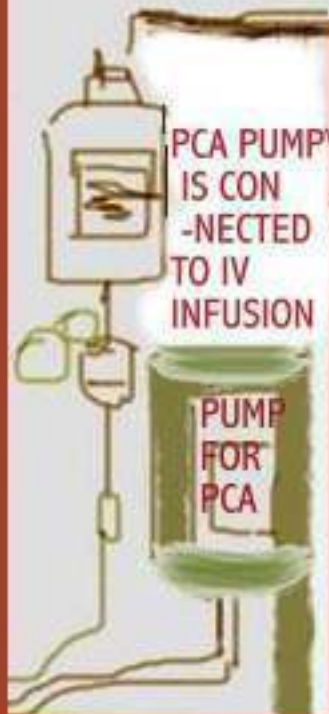
ASSESS AND DOCUMENT:

- VITAL SIGNS
- OXYGEN SATURATION
- LOC
- ANY CHANGES IN ASSESSMENT
- ANY ITCHING
- IV SITE

## HELPFUL HINTS:

- FOLLOW MD ORDERS AND YOUR INSTITUTION'S POLICIES FOR PCA ADMINISTRATION.
- ADVISE PATIENT HOW TO ASSESS PAIN AND USE PCA. DISCUSS WITH PATIENT, THAT USAGE OF PCA SHOULD BE DONE BY PATIENT ONLY. ASSESS, DOCUMENT AND REPORT ANY CHANGES IN PATIENT STATUS.

## PCA ADMINISTRATION



P-A-TIENT  
C-ONTROLLED  
A-ANALGESIA

THE DOCTOR ASSESSES THE PATIENT'S NEED FOR THIS TYPE OF PAIN CONTROL. ANALGESIA (USUALLY A NARCOTIC LIKE MORPHINE SULFATE OR DILAUDID) IS ORDERED BY THE MD. MD ORDERS INCLUDE TYPE OF ANALGESIA, BOLUS AND DOSAGE FOR CONTINUOUS THERAPY. OTHER MEDICATIONS FOR ITCHING OR NAUSEA ARE ALSO INCLUDED.

DOCTOR'S ORDERS ALSO INCLUDE MONITORING OF THE PATIENT'S NEUROLOGICAL, RESPIRATORY AND CARDIAC STATUS. OXYGEN AT LOW DOSES IS ALSO ORDERED. TWO NURSES ARE RESPONSIBLE FOR CHECKING THE MD ORDERS PRIOR TO STARTING PCA.



THIS PATIENT IS ON A PCA PUMP. SHE IS UNABLE TO RESPOND TO THE NURSE.

RESPIRATORY DEPRESSION IS A SIDE EFFECT OF NARCOTIC USE.

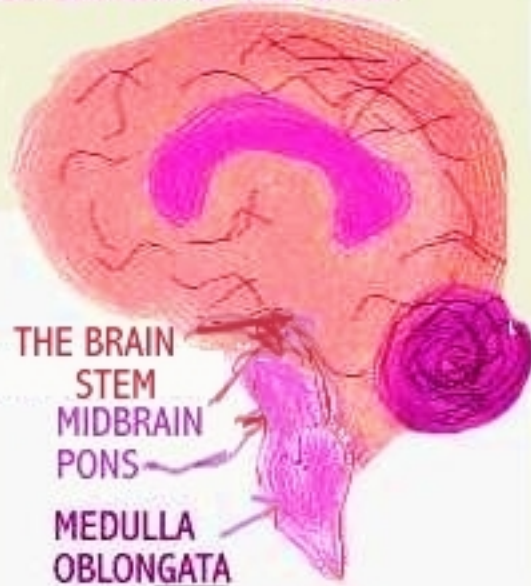
### HELPFUL HINTS:

ALWAYS FOLLOW MD ORDERS AND YOUR INSTITUTION'S POLICIES AND PROCEDURES FOR THE ADMINISTRATION OF THE PCA. ASSESSMENT AND DOCUMENTATION SHOULD BE DONE AS ORDERED. IF A PATIENT BECOMES LETHARGIC, FOLLOW MD ORDERS FOR NEUROLOGICAL CHANGES.

# BRAIN STEM REFLEXES

CRANIAL NERVES 3 AND 4 ARE CONNECTED TO THE MID BRAIN.

## CROSS-SECTION OF THE BRAIN



CRANIAL NERVE -3 (OCULOMOTOR ) CONSTRICTS THE PUPILS WHEN LIGHT IS SHONE INTO THE EYES



CRANIAL NERVE- 4 (TROCHLEAR) MOVES EYES DOWNWARD AND INWARD



CRANIAL NERVE-6 (ABDUCENS) ABDUCTS EYES



ANN PLEASE STICK OUT YOUR TONGUE.



THE DOCTOR CHECKS CRANIAL NERVE-12 THE HYPOGLOSSAL



THE BRAIN STEM CONSISTS OF THE MID-BRAIN, PONS AND MEDULLA. CRANIAL NERVES 3,4,AND 6 ARE RESPONSIBLE FOR EXTRAOCULAR EYE MOVEMENT AND WORK SMOOTHLY TOGETHER . FOR MORE HELPFUL INFORMATION ON THIS TOPIC, GO TO:[www.dearnurses.com](http://www.dearnurses.com)

# BRAIN STEM FUNCTION



JIM HAD A STROKE WHICH INVOLVED HIS BRAIN STEM. BREATHING BECAME DIFFICULT AND HE IS NOW HAVING VENTILATORY SUPPORT. A STROKE IN THE BRAIN STEM MAY ALSO AFFECT VISION AND SPEECH.

PONS - LIKE THE MEDULLA, PLAYS A ROLE IN CONTROLLING BREATHING. AS THIS SWIMMER



CROSSES THE POOL, HIS PONS IS AT WORK. THE WORD PONS MEANS "BRIDGE".

## MEDULLA



TIM IS OUT FOR A MORNING RUN.

CRANIAL NERVES 9-12, ORIGINATE IN THE MEDULLA.

THE MEDULLA CONTROLS BREATHING AND HEART-BEAT. THESE ARE ACTIONS WE DO WITHOUT THINKING.

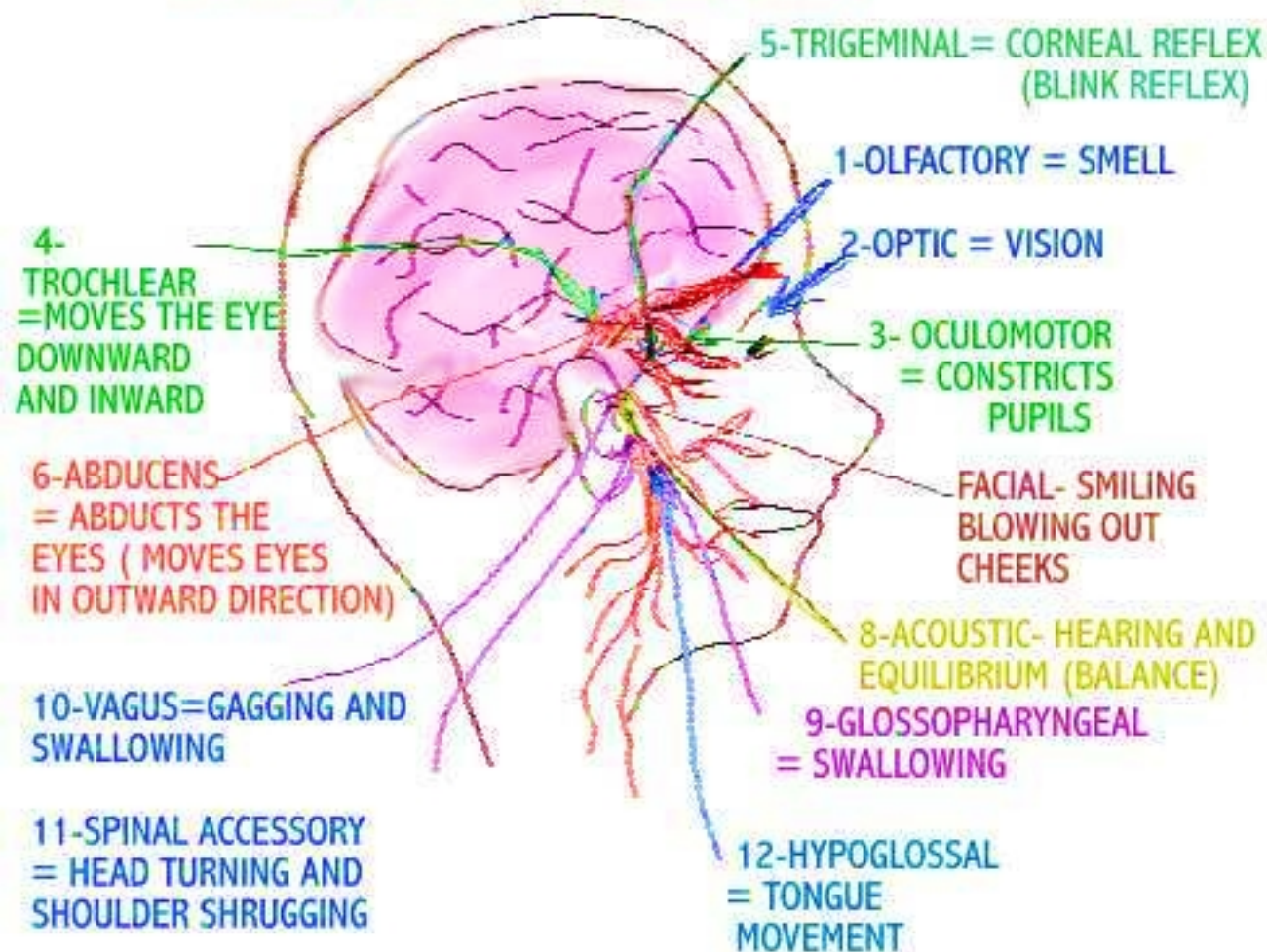
## MIDBRAIN

THE MIDBRAIN IS THE HIGHEST PART OF THE BRAINSTEM. CRANIAL NERVES 3 AND 4 HAVE A CONNECTION TO THIS PART OF THE BRAIN. INJURY TO THE MID-BRAIN WILL AFFECT THESE NERVES.

FOR MORE HELPFUL INFORMATION ON CRANIAL NERVE ASSESSMENT, GO TO: [WWW.DEARNURSES.COM](http://WWW.DEARNURSES.COM) :STROKE SERIES ASSESSMENT"

# NERVES - CRANIAL NERVES

EACH BRAIN HAS 12 PAIRS OF CRANIAL NERVES



FOR MORE HELPFUL INFORMATION ON CRANIAL NERVE FUNCTION, PLEASE GO TO :[WWW.DEARNURES.COM](http://WWW.DEARNURES.COM).  
STROKE SERIES ASSESSMENT.

## COMA, CAN ONE HEAR?



Henry is a 35 year old male, who had a traumatic brain injury. He has been in a coma for 2 weeks. His family members do not believe there is hope. Whenever they visit, they speak negative things over him.

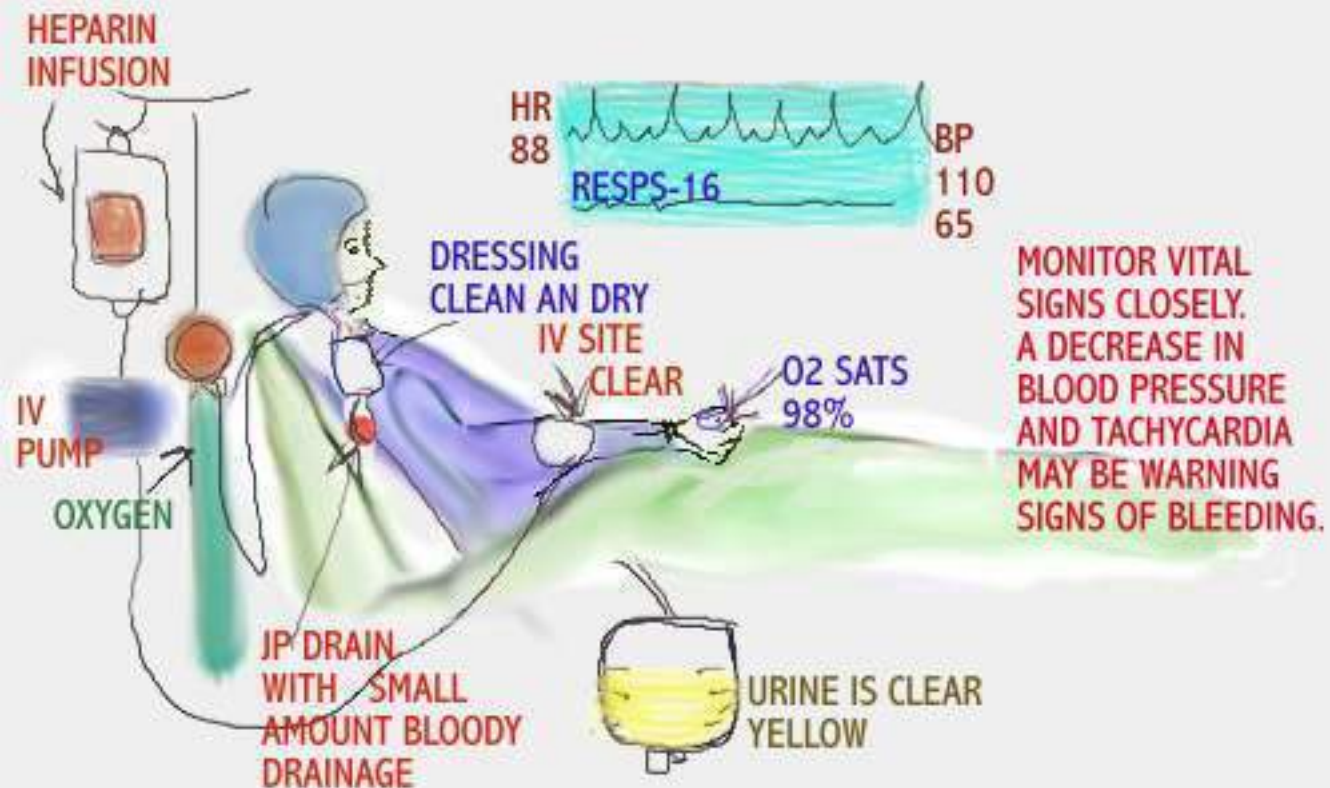
**HELPFUL HINT:**  
Be careful about saying negative things near to a patient in a coma. Patients who have come out of a coma, have been known to repeat what they heard.



One morning Henry awakens while his family is visiting. He begins to repeat what he has been hearing all along.

**Henry is a vegetable.**

# ANTICOAGULATION THERAPY



THIS PATIENT IS IN PACU, FOLLOWING SURGERY TO HER CERVICAL SPINE. SHE IS ALSO ON ANTICOAGULATION THERAPY FOR A PAST HISTORY OF ATRIAL FIBRILLATION.

IT IS IMPORTANT TO ASSESS AND DOCUMENT ANY SIGNS OF BLEEDING FROM JP DRAIN, DRESSINGS, IV SITE, URINARY OUTPUT OR MUCOUS MEMBRANES.

LAB VALUES ARE USUALLY DRAWN TO MAKE SURE LEVELS ARE THERAPEUTIC. NOTIFY MD OF SIGNS OF BLEEDING.

# ANTICOAGULATION THERAPY



Heparin therapy is generally used to prevent the formation of blood clots (thrombi). When given IV, the PTT is ordered by the MD to closely monitor the therapeutic range.

If symptoms of bleeding occur in the patient receiving Heparin, the MD should be notified.

Heparin (enoxaparin sodium or dalteparin sodium) are given sc (subcutaneously), to prevent DVT (deep vein thrombosis). Monitoring of the PTT is not usually done.

HOPE YOU HAVE  
ENJOYED  
LEARNING!

