

Prevention and Detection of Complications



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Aims of Session

- Introduction to the Complications of stroke
- The nurse's role in preventing and detecting Complications

HASU Nursing

HASU nursing is all about:
THROMBOLYSIS

BUT WHAT ABOUT

- DYSYPHAGIA
- INFECTIONS AND SEPSIS
- BLOOD GLUCOSE MANAGEMENT
- NUTRITION
- HYDRATION AND FLUID BALANCE
- BLADDER BOWEL AND CONTINENCE MANAGEMENT
- PRESSURE AREA CARE
- PATIENT POSITIONING
- AND MUCH MORE

DYSPHAGIA

- Take a minute to think about a normal swallow



3D SCIENCE.COM

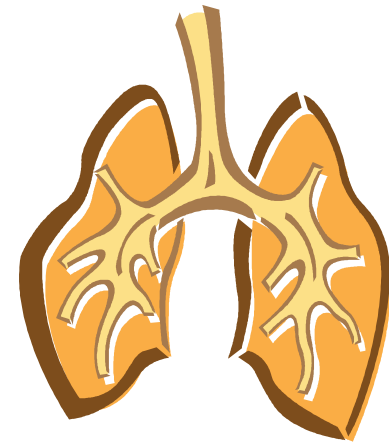
DYSPHAGIA



- Rapid, efficient and safe.
- Four key stages:
 1. 'Pre-oral' – getting food and drink to the mouth.
 2. 'Oral' – getting the food from the front to the back of the mouth.
 3. 'Pharyngeal' – pushing food and drink through the throat and into the top of the oesophagus.
 4. 'Oesophageal' – moving food through the food pipe.

Acute warning signs of swallowing problems and potential aspiration

- Coughing / choking
- Bubbly/gurgly/wet voice - increased difficulty with secretions
- Voice loss
- Wheezing/gurgly breathing
- SOB and reduced SpO₂
- Change of colour
- Persistent spiking pyrexia
- Right base of lung signs



N.B. Silent aspiration!

Chronic warning signs of swallowing problems and potential aspiration

- Recurrent chest infections
- Weight loss
- Hunger
- Refusal to eat
- Dehydration

Dysphagia Screening

- NICE guidelines for Stroke indicate that a stroke patient should be NBM until their swallow is screened and the results are fully documented
- Screening must take place within 24 hrs
- Dysphagia is strongly associated with Acute Stroke
- Early identification enables better decisions about alternative hydration/nutrition/medication if needed
- Reduces risk of secondary complications – chest infection and malnutrition

Nutrition

- The average adult needs 2000 calories a day
- How many calories do you think a patient who has **Dysphagia**???



About 200 to 400 calories

Malnutrition

Leads to:

- Pressure ulcers
- Muscle wasting
- Poor immune system
- Longer hospital stay



What can we do?

- Weight
- Malnutrition Score
- Little and often
- Food Chart
- Supplements
- Consider NG tube



BLOOD GLUCOSE MANAGEMENT

- Hyperglycaemia has been associated with aggravation of cerebral oedema as well as increased stroke severity and mortality.
- Hypoglycaemia can mimic the symptoms of stroke.

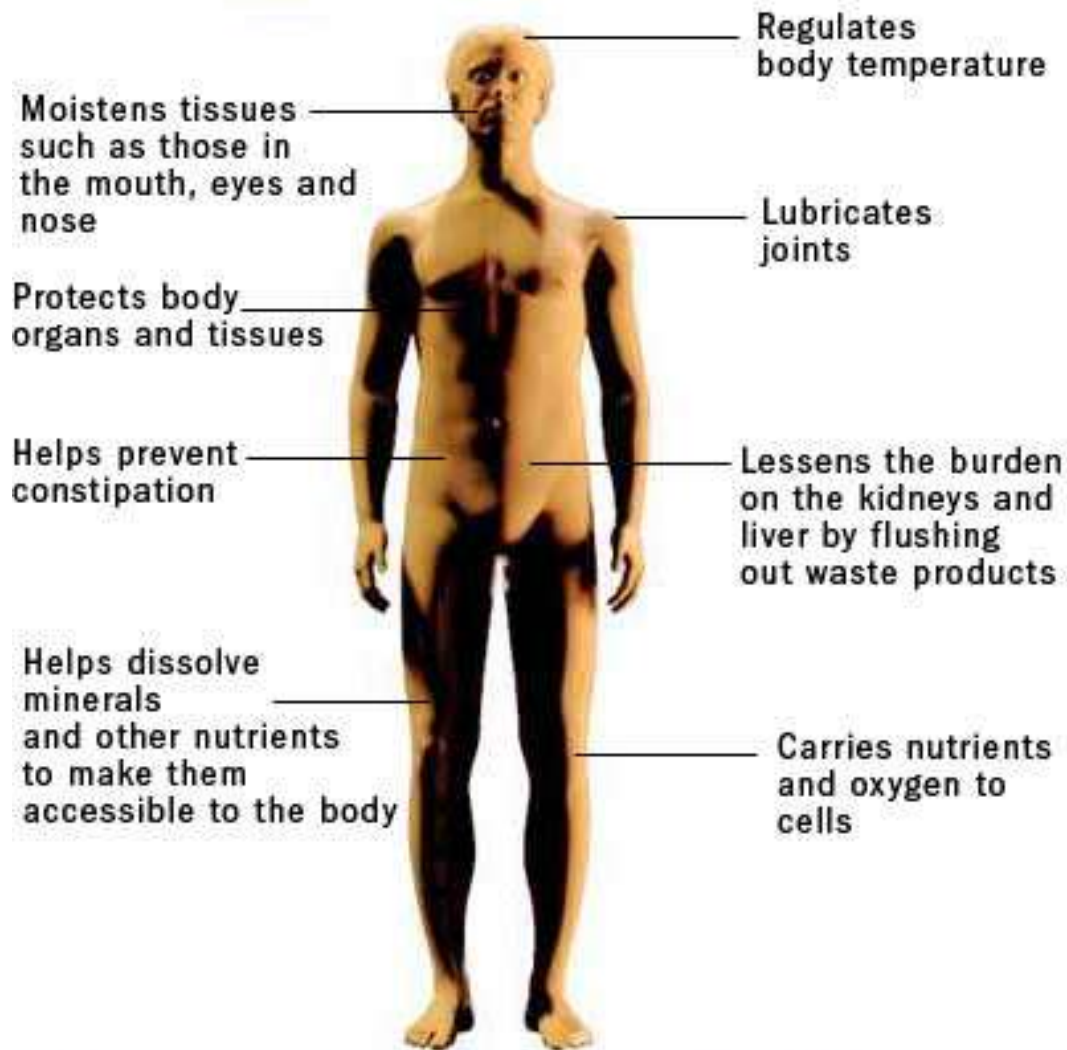


Fluid Balance and Hydration

Why do a fluid balance?

- ✓ **Cardiac Function**
- ✓ **Renal Function**
- ✓ **Endocrine Function**
- ✓ **Electrolytes**





Signs of Dehydration

- Tachycardia
- Hypotension
- Low urine output (less than 0.5ml/Kg/hr)
- Dark concentrated urine
- Dry mucosa

Think what the problem is!!

What you can do

- Oral fluids- do the swallow assessment
- Enteral fluid and feed- if fails the DST
- IV Fluid
 - crystalloid
 - colloid

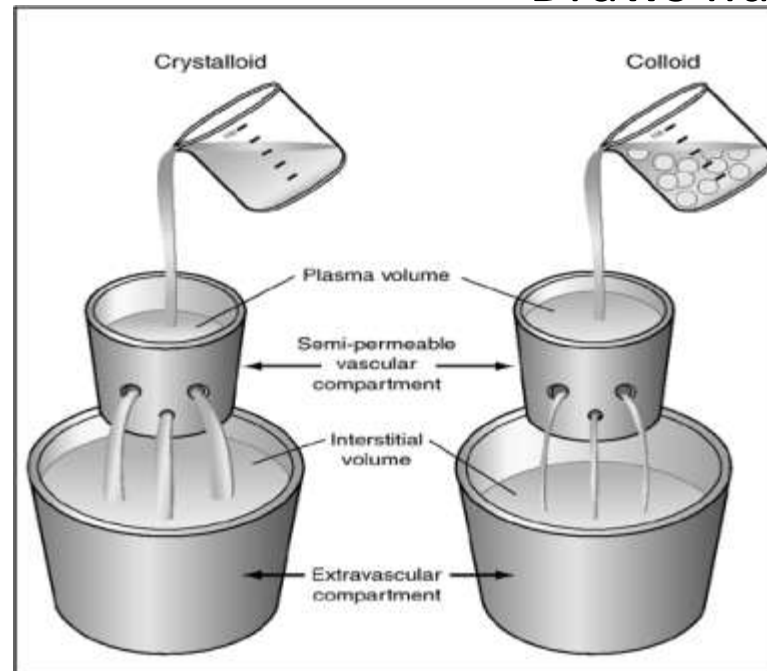
Crystalloid vs Colloid

Crystalloid

- Small Molecules
- Flows easily into cells and tissues

Colloid

- Large Molecules
- Draws fluid into vasculature.

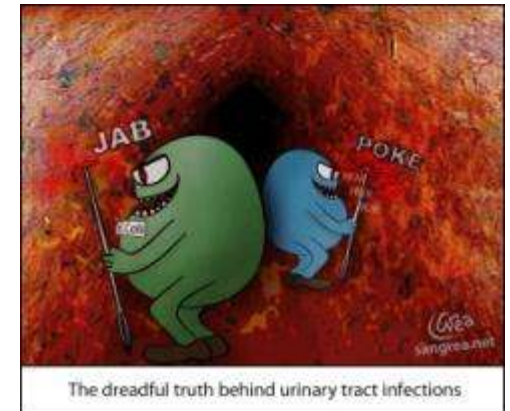


INFECTION AND SEPSIS

- CHEST INFECTION



- UNARY TRACT INFECTION



- LINE INFECTION



Sepsis

- Sepsis is a life-threatening condition that arises when the body's response to an infection injures its own tissues and organs.
- Sepsis leads to shock, multiple organ failure and death especially if not recognized early and treated promptly.
- Sepsis remains the primary cause of death from infection despite advances in modern medicine, including vaccines, antibiotics and acute care.

www.survivingsepsis.org 2010

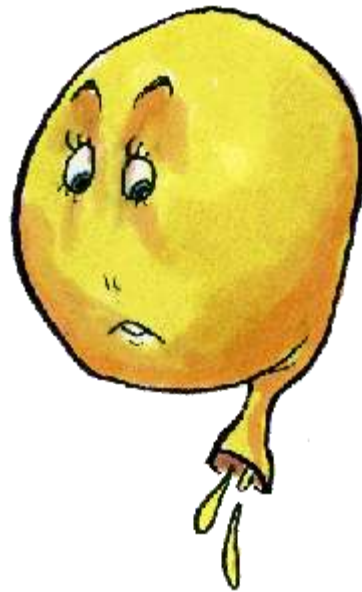
Signs of Sepsis

- Increasing Respiration rate
- Tachycardia
- Temp >37 (very bad for Stroke patients)
- Hypotension (Its getting worse for our stroke patient)
- Low urine output ($<0.5\text{mls/Kg/Hr}$)
- Signs of local infection
- Raised White Cell Count

The Sepsis 6

1. Give Oxygen
2. Send Cultures for MC&S (urine, sputum and blood)
3. Give Antibiotics (in line with trust protocol)
4. Give IV fluid
5. Check haemoglobin and lactate
6. Monitor patient

Continence Care in Acute Stroke



Impact of the problem

Urinary or faecal incontinence is distressing, unpleasant and frequently socially disruptive

Continence Service

(Good Practice in Continence Service, 2000)

Service components:-

- Raising awareness among the public and health professionals
- Identifying incontinent individuals
- For each individual, conducting an initial assessment, agreeing management/treatment plan and instigating initial treatment

- Reviewing treatment
- Supplying continence aids including pads when indicated
- Advising and helping carers
- Providing specialist services in community and hospital settings

Continence Care after Stroke

Majority of people have some continence problems after a stroke (Brockelhurst, 1985)

Some spontaneously regain continence
6-8 wks. (Borne et al. 1986)

Severe strokes → ongoing problems

Good indication of outcome

Factors that can contribute to urinary continence

- Cognition
- Reduced conscious level
- Dyspraxia
- Faecal impaction
- Communication
- Medication
- Urinary Tract Infection
- Urinary overflow due to obstruction e.g. prostatic enlargement

Neurogenic bladder dysfunction

Neurogenic dysfunction results from damage to the cerebral micturition centre and/or disruption of the neural pathway between the bladder and the brain centres involved in voiding (Colman Gross,1990)

Pathophysiology

Neurogenic Detrusor overactivity:- urgency
frequency
incontinence

Detrusor underactivity/areflexia:- retention

(Khan et al.1988)

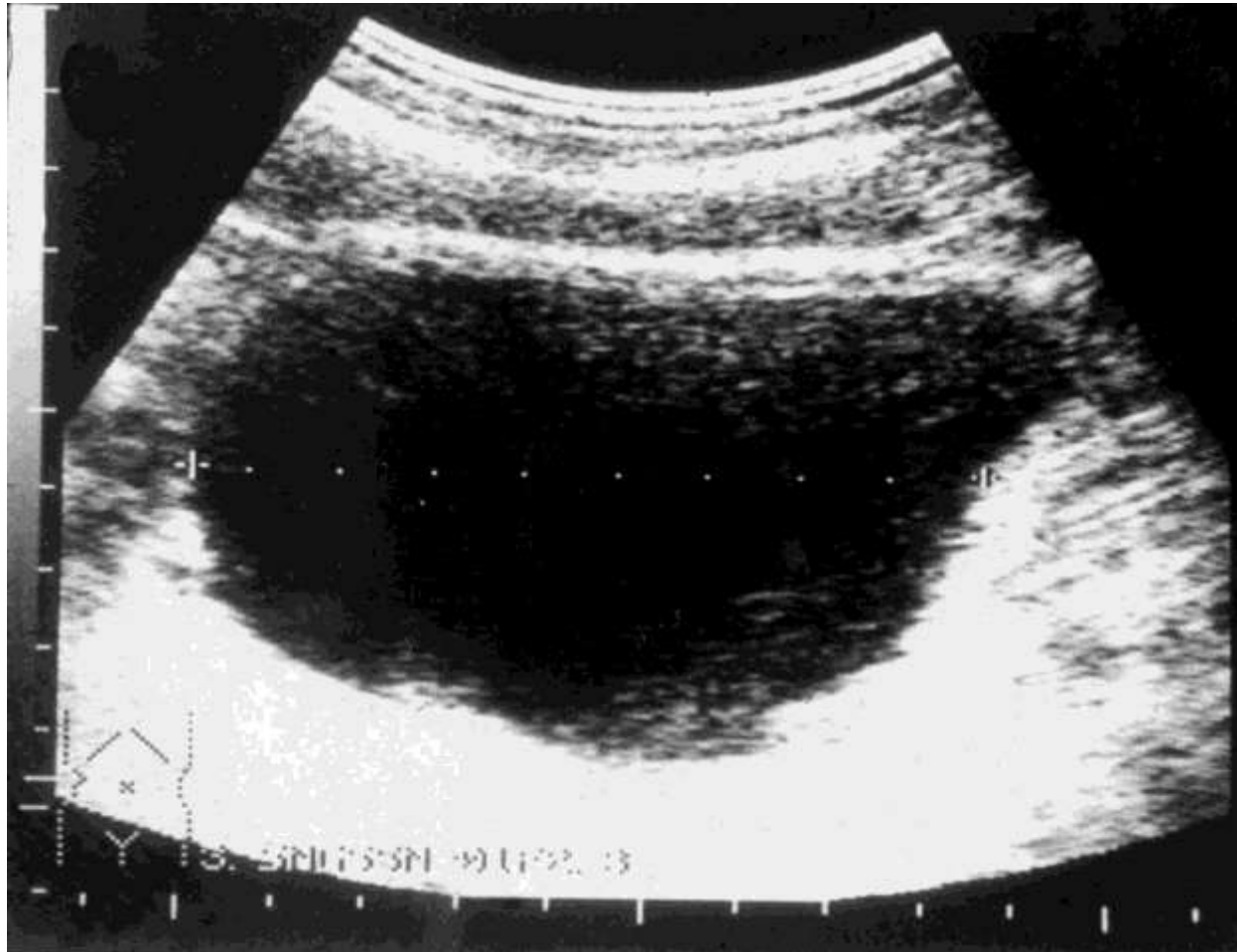
Management

- **Assessment of continence essential**
- **Use of micturition charts**
- **MSU**
- **Measurement of post micturition volumes**

Measurement of post-micturition residual volume by US



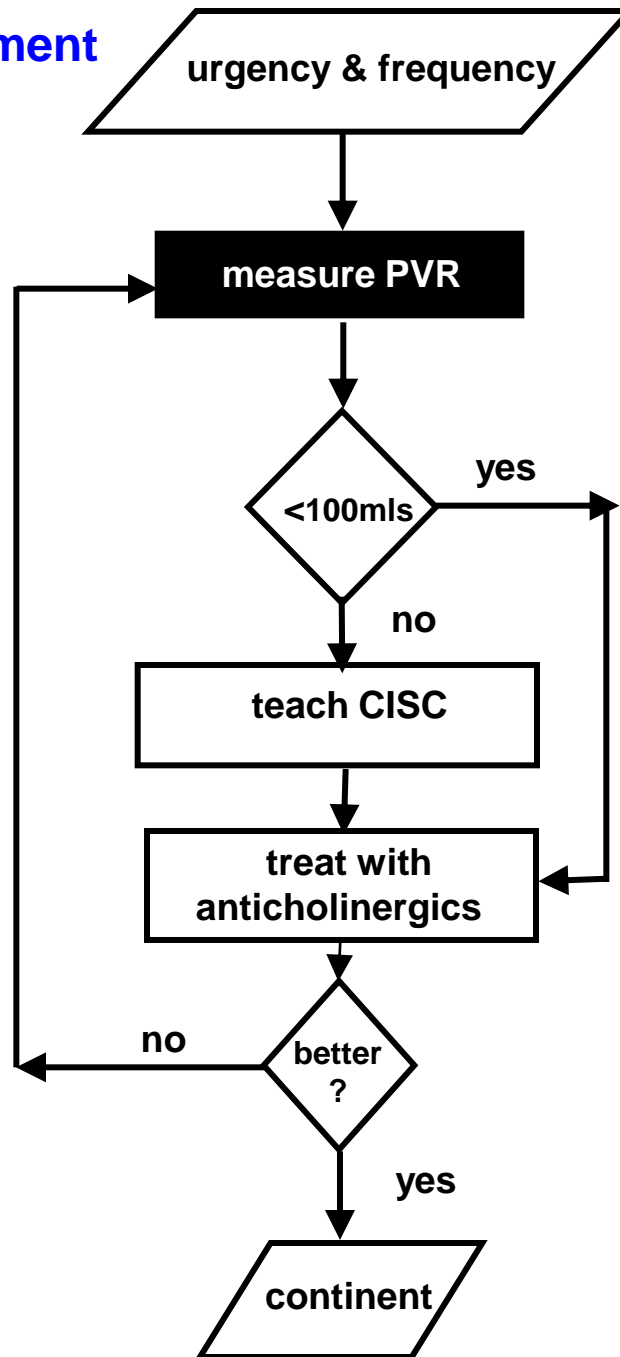
Ultrasound measure of post micturition residual volume



Anticholinergics

- Oxybutynin max 20 mg / 24hr
- Oxybutynin XL (Lyrinel XL) 30 mg od
- Tolterodine (Detrusitol) 2 mg bd
- Tolterodine (Detrusitol XL) 4 mg od
- Trospium hydrochloride (Regurin) 20mg bd
- Solifenacin 5-10mg
- Other M2/M3 blockers in preparation
- **SE = dry mouth, constipation and various other symptoms**

Algorithm in the management of urinary symptoms



Bowel Dysfunction

- Faecal Incontinence affects 40% immediately after stroke
- Between 10-19% of stroke survivors at 6 months and around 22% at 12 months
- Constipation affects roughly 60% of patients in the rehabilitation setting








Factors affecting Bowel Dysfunction

- Increasing age
- Diabetes/ Neuropathy
- Stroke severity
- Immobility
- Size of brain lesion
- Medication

Assessment

- Establish normal bowel habits
- Stool consistency
- Colour and smell of stool
- Problems with control
- Bloating
- Pain on defaecation/straining
- Coping strategies
- Diet and fluids

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. Entirely Liquid

Management

- Dietary advice
- Sufficient fluid intake
- Laxatives
- Suppositories
- Enemas

Pressure ulcers

Pressure ulcers occur when local pressure on the skin and subcutaneous tissues exceeds the capillary opening pressure for long enough to cause ischaemia

(Warlow et al 2008)

Pressure area care

- Assessment vital – Waterlow/Norton score
 - Level of Mobility
 - Continence
 - Cognitive Function
 - Nutritional status

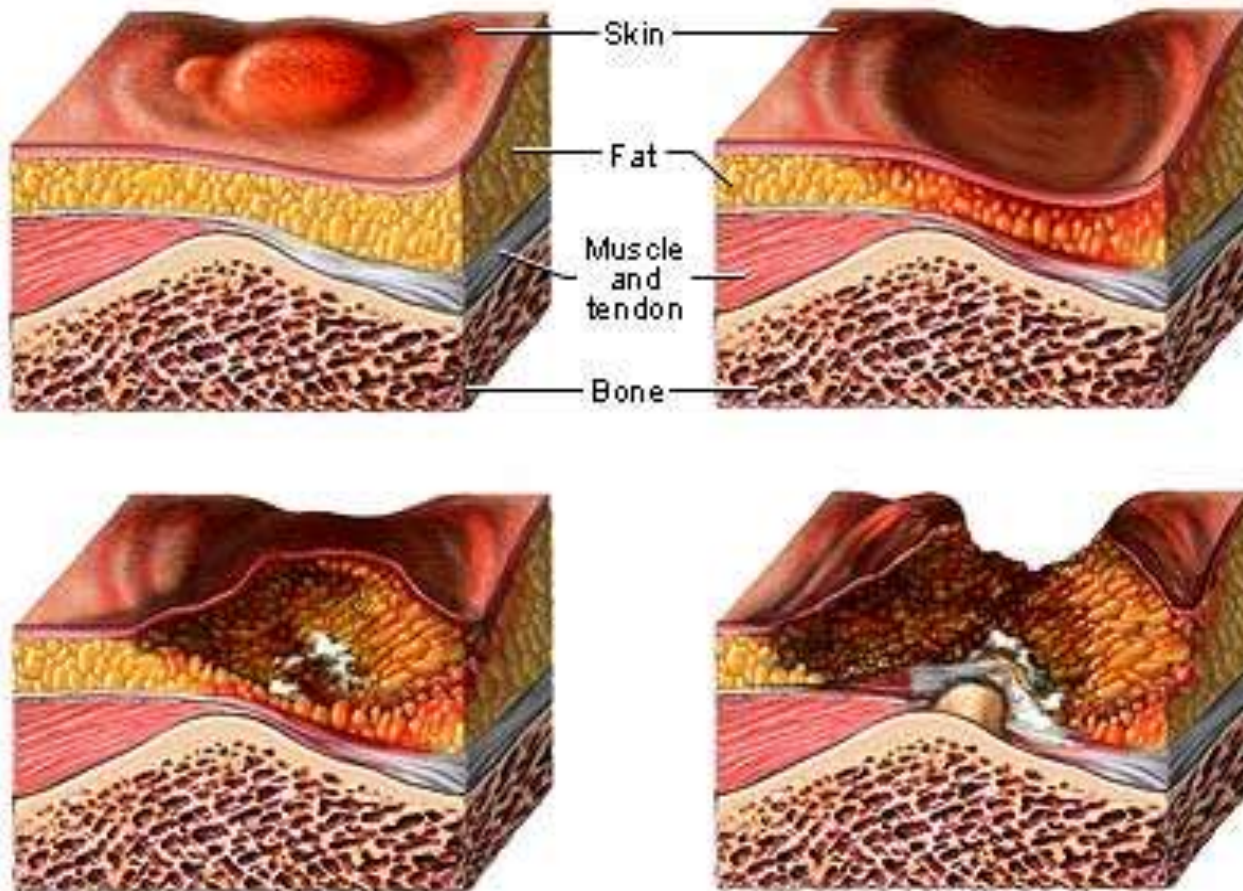
Prevention

- Relieve pressure areas
- Pressure relieving mattresses – low air loss systems
- Gel pads
- Sheepskin fleeces

Classification of pressure Ulcers

- Grade 1 – Non blanchable erythema of intact skin
- Grade 2 – Partial thickness skin loss involving epidermis, dermis or both
- Grade 3 - full thickness skin loss involving damage to or necrosis of subcutaneous tissue that may extend down to, but not through underlying fascia
- Grade 4 - extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures with or without full thickness skin loss

Progression of decubitus ulcer



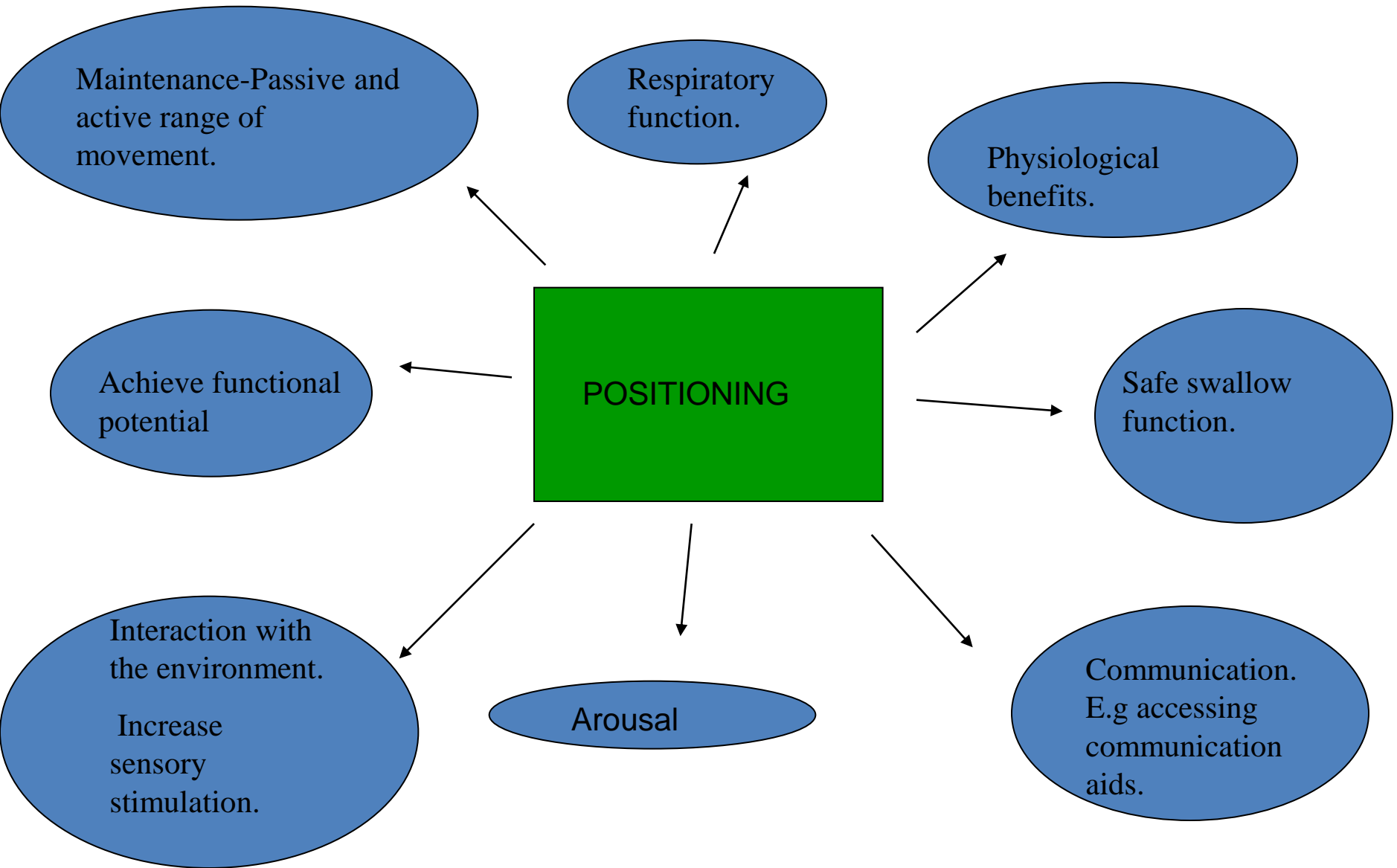
Treatment

- Dressings
- Treat pain
- Antibiotics
- Debridement

What is postural management?

- 24-hour postural management is an approach to the handling, treatment, and positioning of adults after acquired brain injury (Edwards, 2002)
- Enables patients in daily activities whilst gaining the benefits of good positioning by using specific equipment/methods

Why is positioning important ?



Evidence for Positioning

- Very limited to support positioning
- Accepted as good clinical practice
- Maintenance and improvement of joint soft tissue and alignment essential to optimise muscle activity (Gracies, 2005, Sahrman, 2002)

Poor upper limb recovery

- 5% regain full arm function post stroke, 20% no functional use (Basajan et al, 1982).
- At 1 year 60% of survivors have 'residual motor dysfunction' (Stein d G, 1998).
- Recovery Patterns (Broeks et al, 1999).
- 25% of pts made partial recovery after 2 years, 61% had non-functional arms (Wade et al, 1983).

Interventions

- Seating- Use of trays / cuffs/ external supports / pillows (Byrne and Ridgeway 1998, Zorowitz et al 1995, Buchholz Moodie et al 1986, Morley et al, 2002)
- Bed positioning (Edwards 2002)
- Splinting / orthosis
- Strapping
- Positioning and stretches (Ada et al 2005, Farmer & James 2001)

- Individual sessions e.g active exercises (Van Peppen 2004)
- Within function ie. How does someone sit in shower, toilet, transferring, walking and when out with family
- Education and handling advice
- Environmental changes
- Medication



splints

- Thermoplastic



- Soft and scotch



- Pre-fabricated



wheelchairs



Team approach

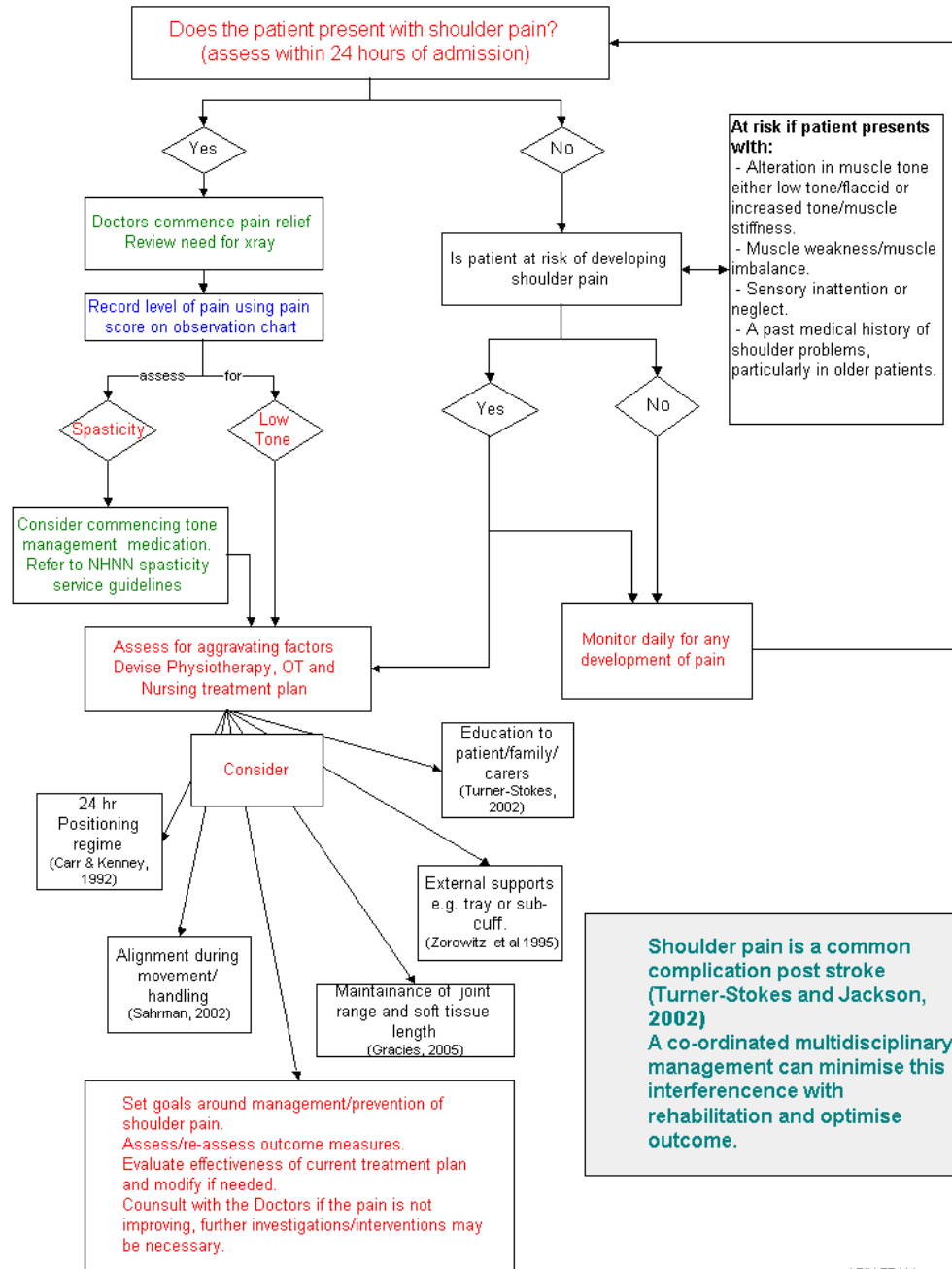
EVERYONES RESPONSIBILITY

- To be effective needs to extend to all aspects of lifestyle throughput 24 hours (Edwards, 2002)
- Nurses make potentially the largest contribution to effective positioning
- Guided by therapists (Doswell et al, 2000)

Post Stroke Shoulder Pain

- Occurs in up to one fifth of patients in first 6 months
- The most at risk patients are those that altered muscle tone or weakness, sensory inattention or neglect or previous shoulder problems
- Treatment of established shoulder pain is usually ineffective so preventative measures are paramount

Management/Prevention of Post Stroke Shoulder Pain



VTE Prophylaxis

- Separate guidance for Acute Stroke
- Until recently Graduated Compression Stockings use not evidence based in acute stroke
- CLOTS
- On going research into the use of pneumatic compression stockings

In Conclusion

- So.....
- As you can see there is a lot more to HASU nursing than Thrombolysis