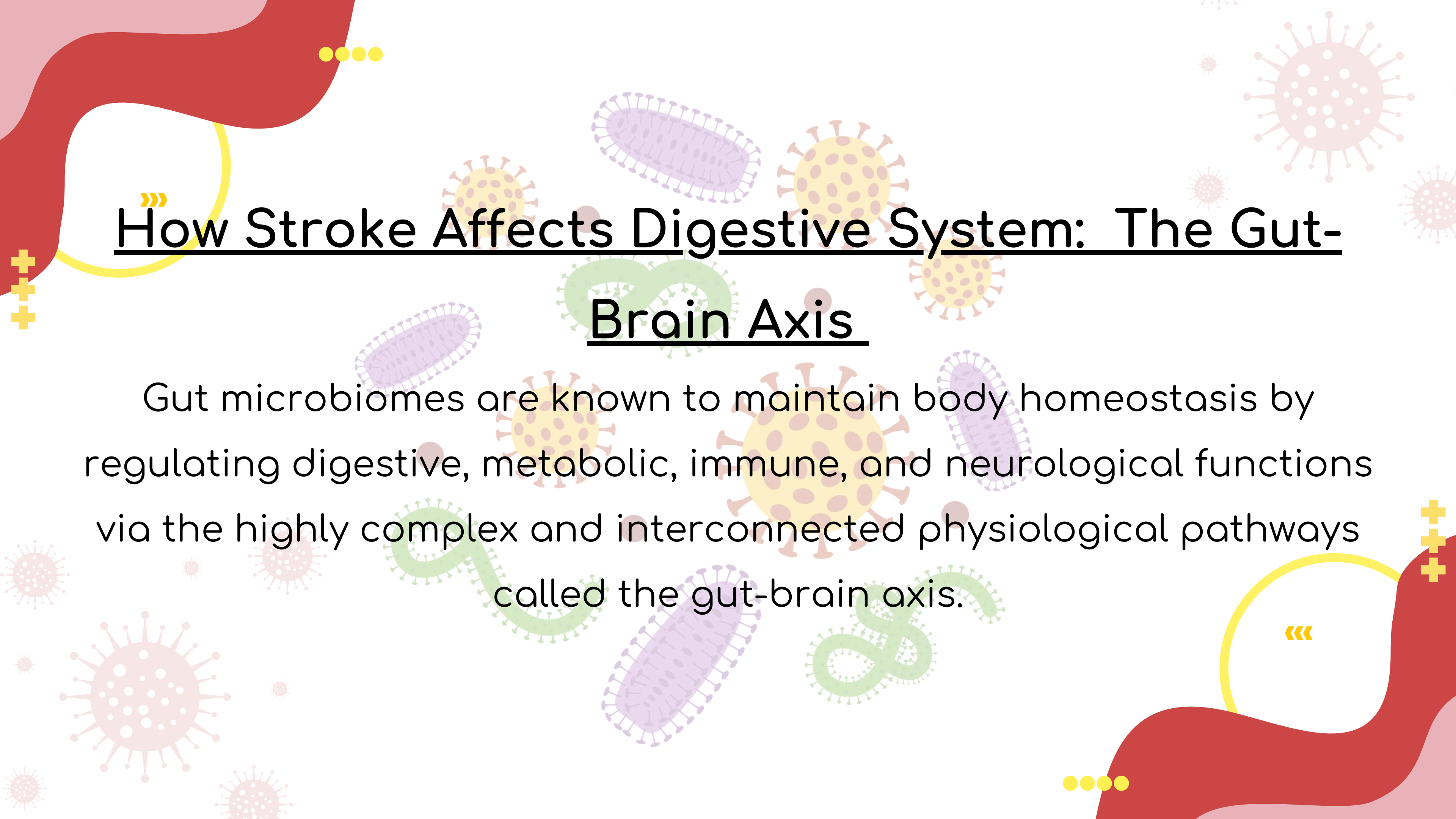




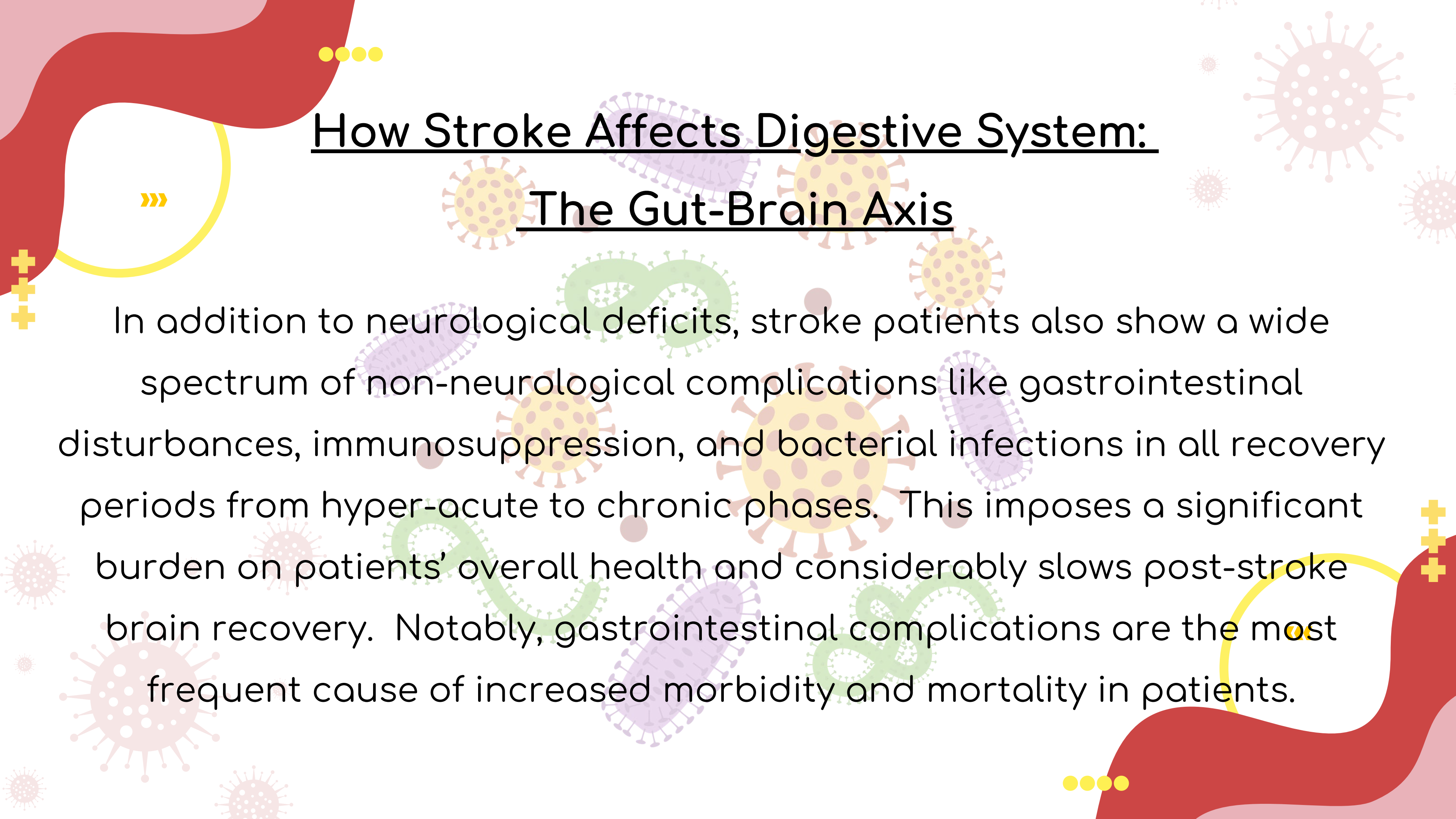
Bowel Patterns in Stroke

Presented by
Verdane Simeon-Bennett, BSN, RN, CCRN



How Stroke Affects Digestive System: The Gut-Brain Axis

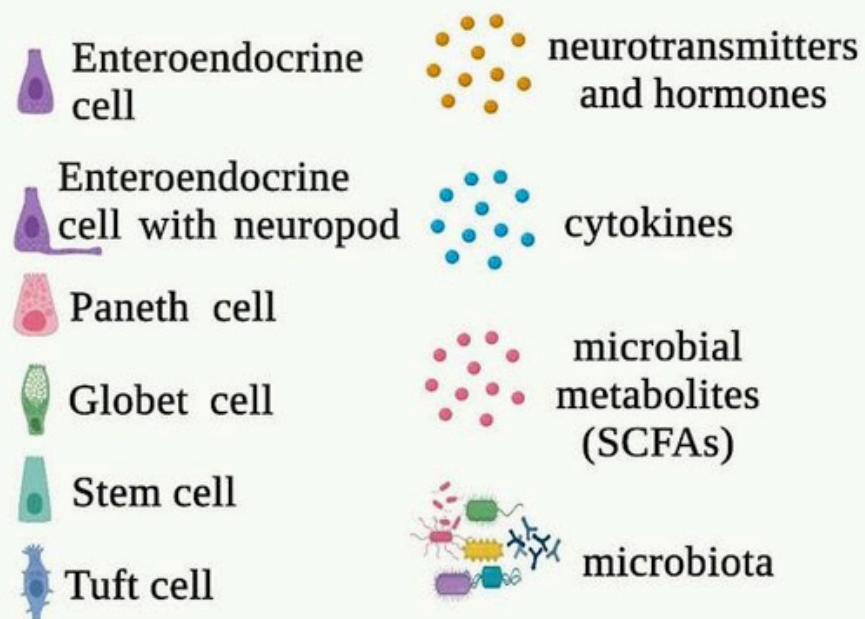
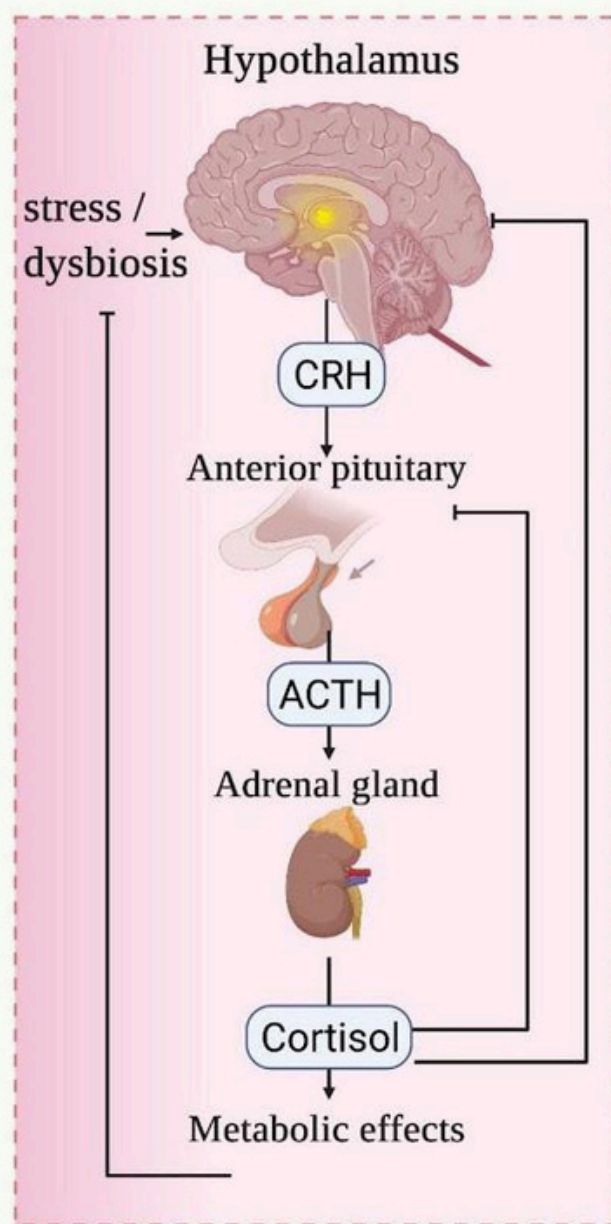
Gut microbiomes are known to maintain body homeostasis by regulating digestive, metabolic, immune, and neurological functions via the highly complex and interconnected physiological pathways called the gut-brain axis.



How Stroke Affects Digestive System:

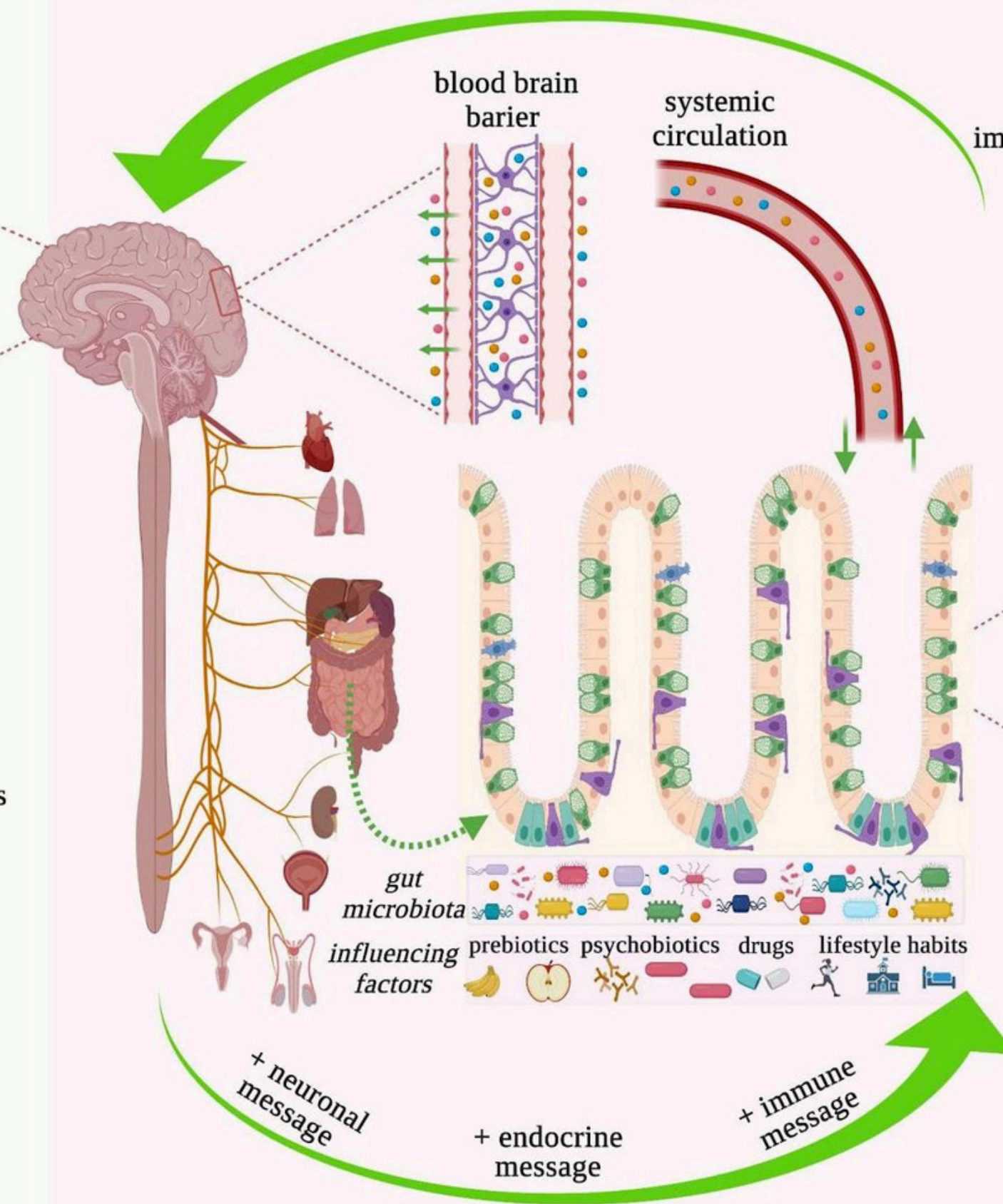
The Gut-Brain Axis

In addition to neurological deficits, stroke patients also show a wide spectrum of non-neurological complications like gastrointestinal disturbances, immunosuppression, and bacterial infections in all recovery periods from hyper-acute to chronic phases. This imposes a significant burden on patients' overall health and considerably slows post-stroke brain recovery. Notably, gastrointestinal complications are the most frequent cause of increased morbidity and mortality in patients.



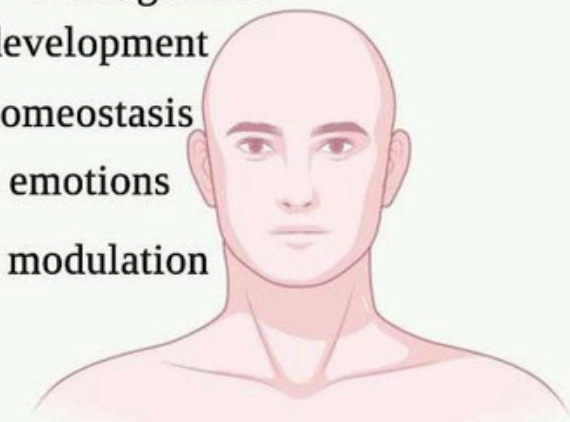
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GUT-BRAIN AXIS

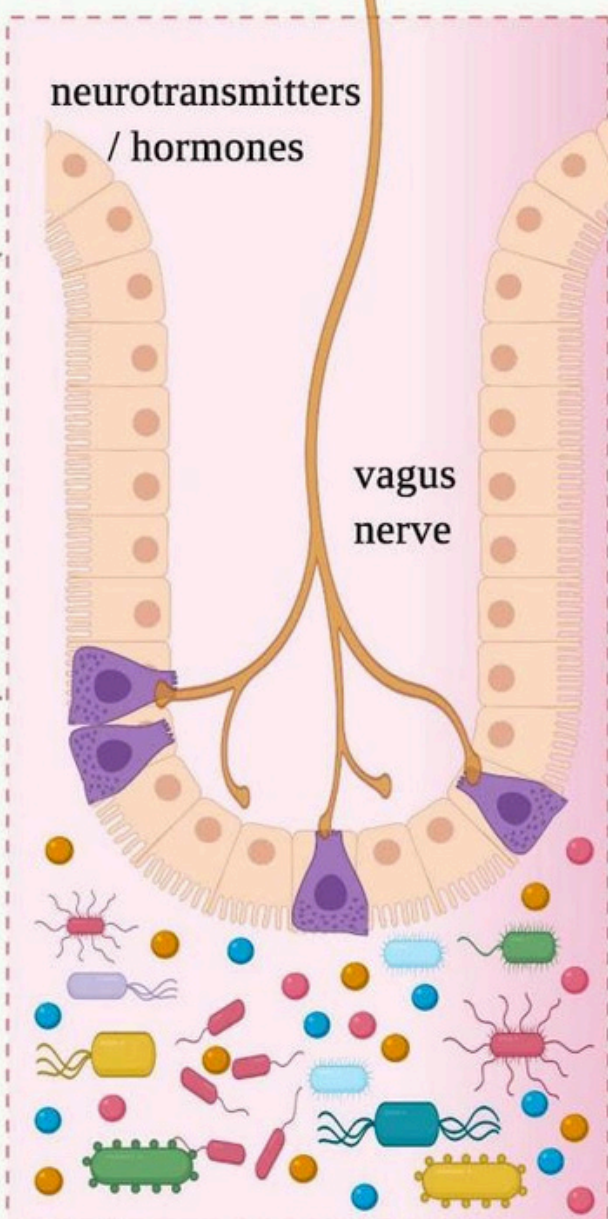


1

neurogenesis
neurodevelopment
mental homeostasis
background emotions
immune response modulation



3



BRAIN-GUT AXIS

The Rule of Three

- Up to three bowel movements in day, that are soft and formed
- At least one bowel movement every three days
- Passing of stool in less than three minutes

BRISTOL STOOL CHART



Type 1 Separate hard lumps

SEVERE CONSTIPATION



Type 2 Lumpy and sausage like

MILD CONSTIPATION



Type 3 A sausage shape with cracks in the surface

NORMAL



Type 4 Like a smooth, soft sausage or snake

NORMAL



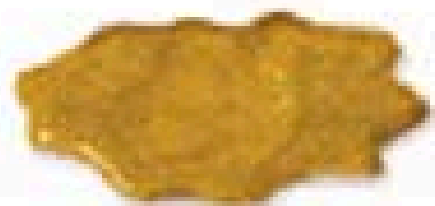
Type 5 Soft blobs with clear-cut edges

LACKING FIBRE



Type 6 Mushy consistency with ragged edges

MILD DIARRHEA



Type 7 Liquid consistency with no solid pieces

SEVERE DIARRHEA

Types of Altered Bowel Function



»» Constipation

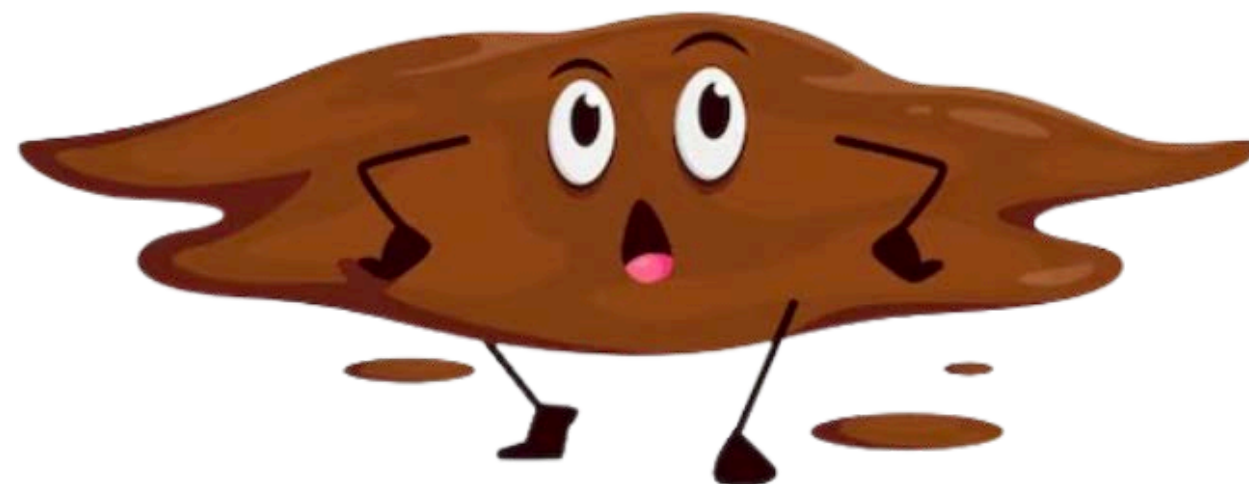
- Defined as passing less than three stools a week or having a difficult time passing stool
- Risk factors: fluid restriction, prolonged immobility, NPO status as result of difficulty swallowing, unconsciousness, decreased bulk in diet, drugs known to decrease peristalsis, lack of sensation, lack of privacy, interruption of usual bowel routine, and failure to respond to defecation stimuli

««

Types of Altered Bowel Function

Diarrhea

- Defined as having loose, watery, or liquid bowel movements three or more times in a single day
- Risk factors: intolerance to tube feeding, medications/antibiotic therapy, and fecal impaction

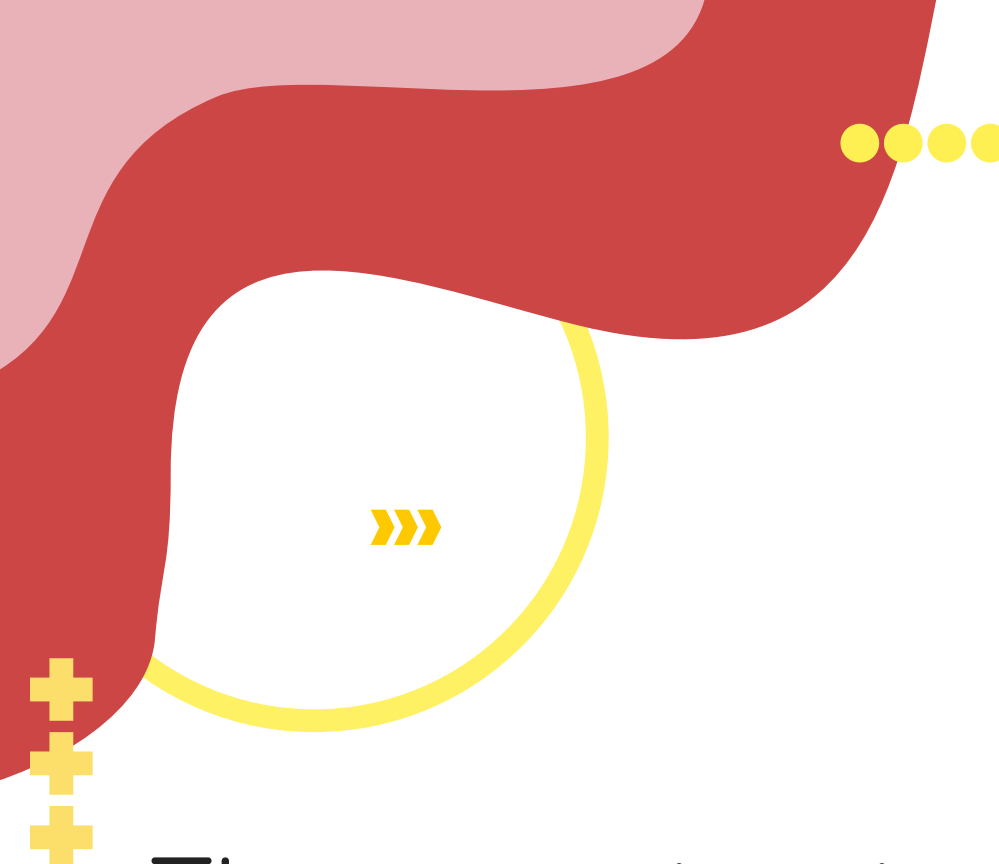


Types of Altered Bowel Function



Incontinence

- Defined as accidental passing of solid or liquid stool.
- Risk Factors: Altered consciousness, cognitive deficits (e.g. social disinhibition, lack of impulse control, inability to recognize and respond to defecation impulses), impaired communication, or neurogenic bowel



Focus on Constipation



There are two types of constipation:

- Primary Constipation: classified as a slow transit or outlet dysfunction
 - Secondary Constipation: caused by dehydration, neurological disorders, structural abnormalities, or medications
- 

»» Secondary Constipation

- relates to diet, lifestyle, and medications.
- It also occurs in a variety of conditions
(e.g. Neoplasia, DM, MS, Parkinson's, Thyroid disease,
Pregnancy, Scleroderma, Amyloidosis, Depression,
Anorexia, etc)



Potential Physical Assessment Findings of Constipated Patient

- Abdominal distention, discomfort w/palpation
- Surgical Scars
- Palpable fecal mass
- Non-fecal masses
- Anal inspection for scars, fistulas, fissures, hemorrhoids



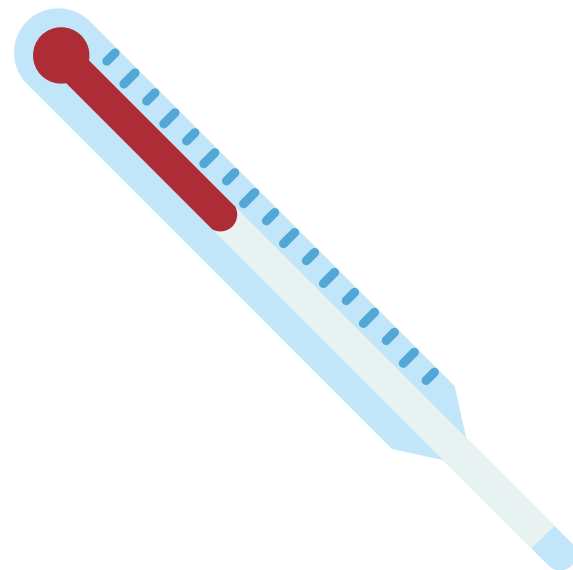
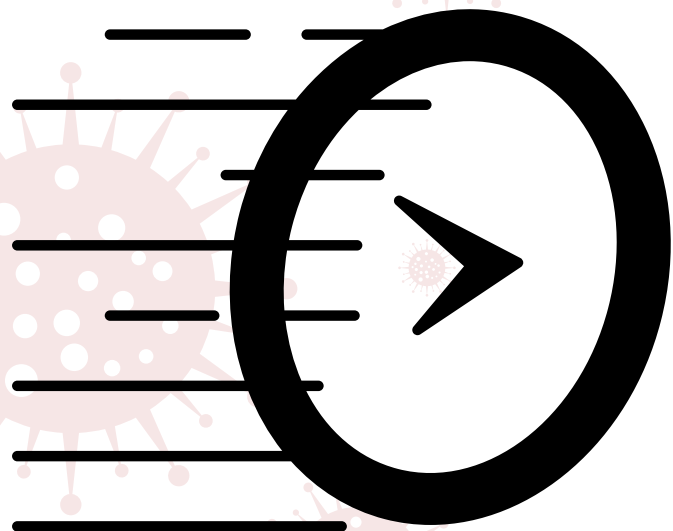
Physical Assessment Findings of Constipated Patient

- Assessing for perineal descent while the patient bears down
- Digital rectal exam may reveal rectocele, tenderness, impaired sphincter tone*



Findings that may warrant further investigation:

- Acute onset
- Fever
- Nausea or Vomiting
- Anemia
- Hematochezia or Melena, positive fecal occult blood test



Medications that can contribute to constipation

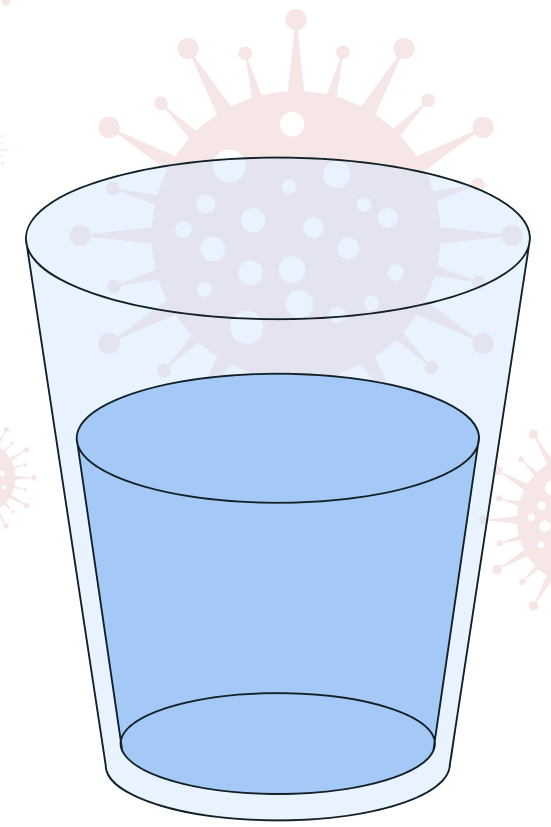
Antipsychotics
Iron Supplements
Antidepressants
Anticholinergics
Opioids
Antacids

Calcium Channel Blockers
Anti-inflammatory Drugs or NSAIDs
Sympathomimetics



Management of Constipation

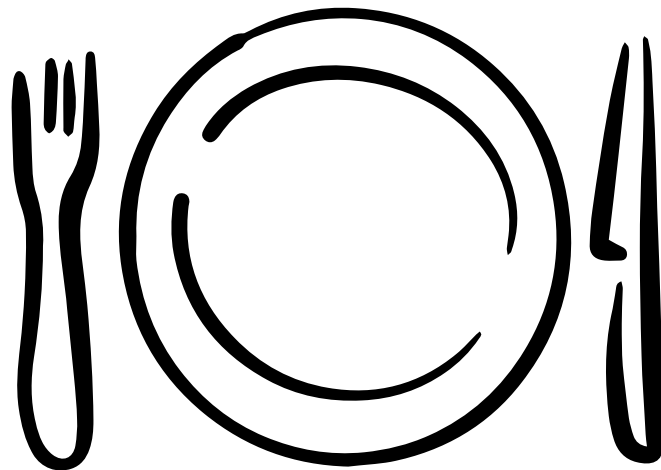
- Changing lifestyle (diet, activity, social habits)
- Adding psyllium supplements
- Increasing fluid intake
- Eating high fiber diet
- Reducing amount of red meat, fried/fatty foods, and dairy products
- Using laxatives
- Adding stimulant laxatives
- Increasing physical activity



Strategies/Interventions to Maintain Regularity.



- Meal size, timing, and composition
 - Smaller, more frequent meals spaced evenly throughout the day
 - Lower-fat meals (empty from the stomach more efficiently)
- Fluid intake
 - Dehydration worsens constipation and can slow digestion further.
Providing fluids consistently throughout the day is better tolerated
- Positioning after meals
 - Remaining upright for at least 30-60min after meals aids stomach in emptying and reduces reflux

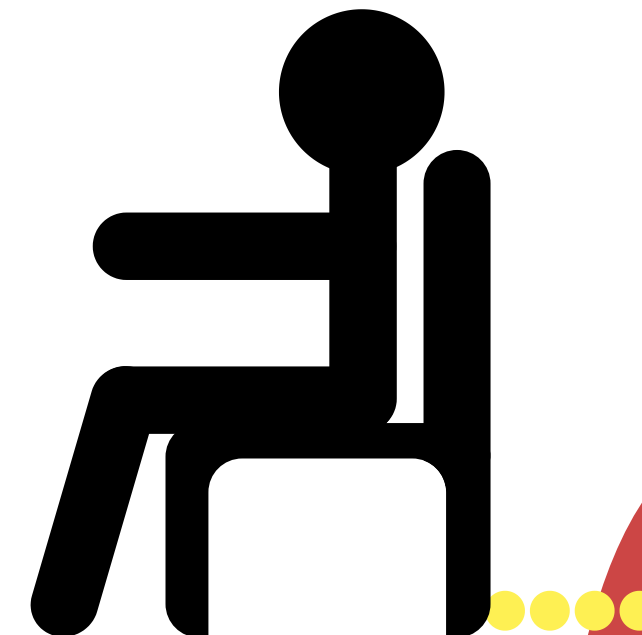


Strategies/Interventions to Maintain Regularity.

- Activity
 - Light physical activity—from short walks to assisted standing can help stimulate intestinal contractions and promote regularity.
- Bowel retraining and routine
 - The GI tract responds to predictable cues (sitting on toilet, same time each day, after a meal can help establish regular bowel habits



PHYSICAL ACTIVITY



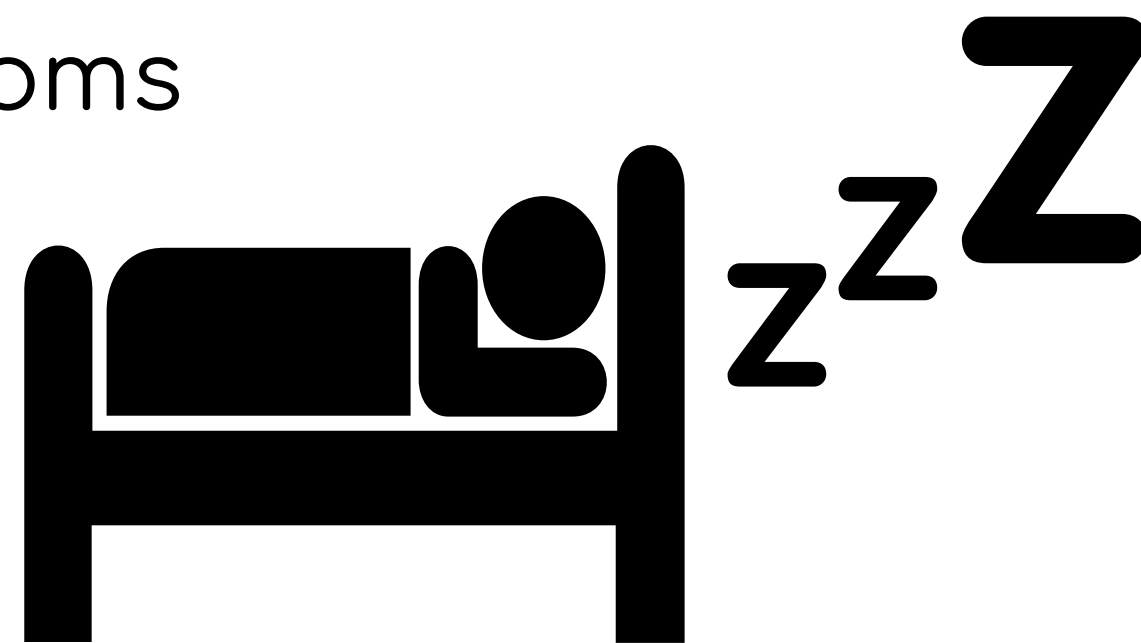
»» Strategies/Interventions to Maintain Regularity

- Medication review
 - Some medications commonly used after stroke can worsen bowel symptoms—adjusting timing, dose, or formulation may help. Also, adding bowel regimen medications may also benefit patient.



Strategies/Interventions to Maintain Regularity

- Managing Stress and Fatigue
 - Fatigue, anxiety, and disrupted sleep can all worsen digestive symptoms after stroke, addressing these issues with rest, pacing, and supportive therapies can help improve GI symptoms

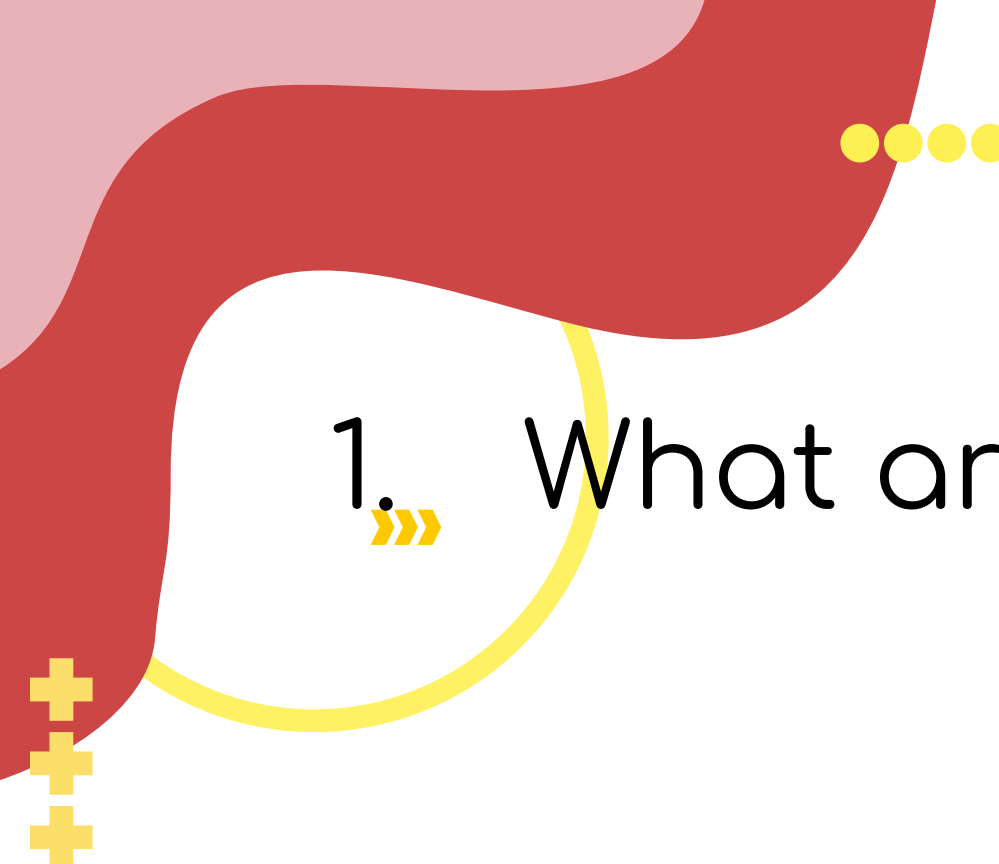


Case Study



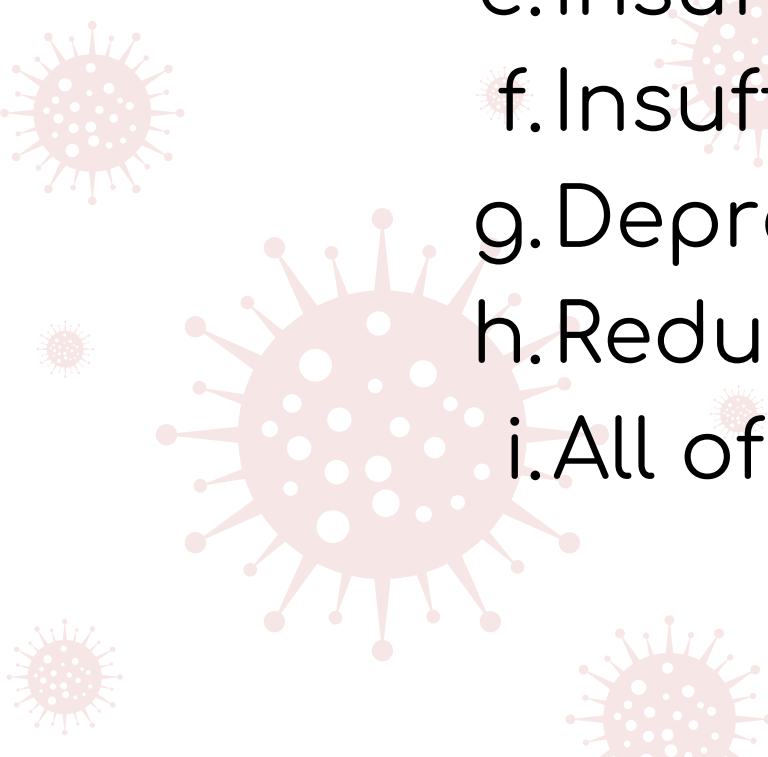
Mr. Barnes is a 72 yo patient who was admitted with an acute right middle cerebral artery (MCA) ischemic stroke, resulting in left-sided hemiplegia and severe dysphagia. He has a history of DM, HTN, HLD, Obesity, and CKD. On the third day of hospitalization, he was started on tube feedings via NGT; by the fifth day, he developed abdominal distention, increased tube feeding residuals, and he was not noted to have passed flatus or have a bowel movement.





1. What are some of the contributing factors to post-stroke constipation?

- a. Drug intake
- b. Inactivity
- c. Cognitive impairment
- d. Lethargy
- e. Insufficient water intake
- f. Insufficient nutrition intake
- g. Depression
- h. Reduced consciousness
- i. All of the above.



««

2. What interventions would be anticipated?



- a. Holding tube feedings and making patient NPO.
- b. Decompressing the stomach by placing NGT to low suction.
- c. Obtaining KUB to determine if obstruction.
- d. Providing suppository or enema to clear lower bowel.
- e. Repositioning patient to facilitate movement
- f. Adjusting tube feedings.
- g. All of the above





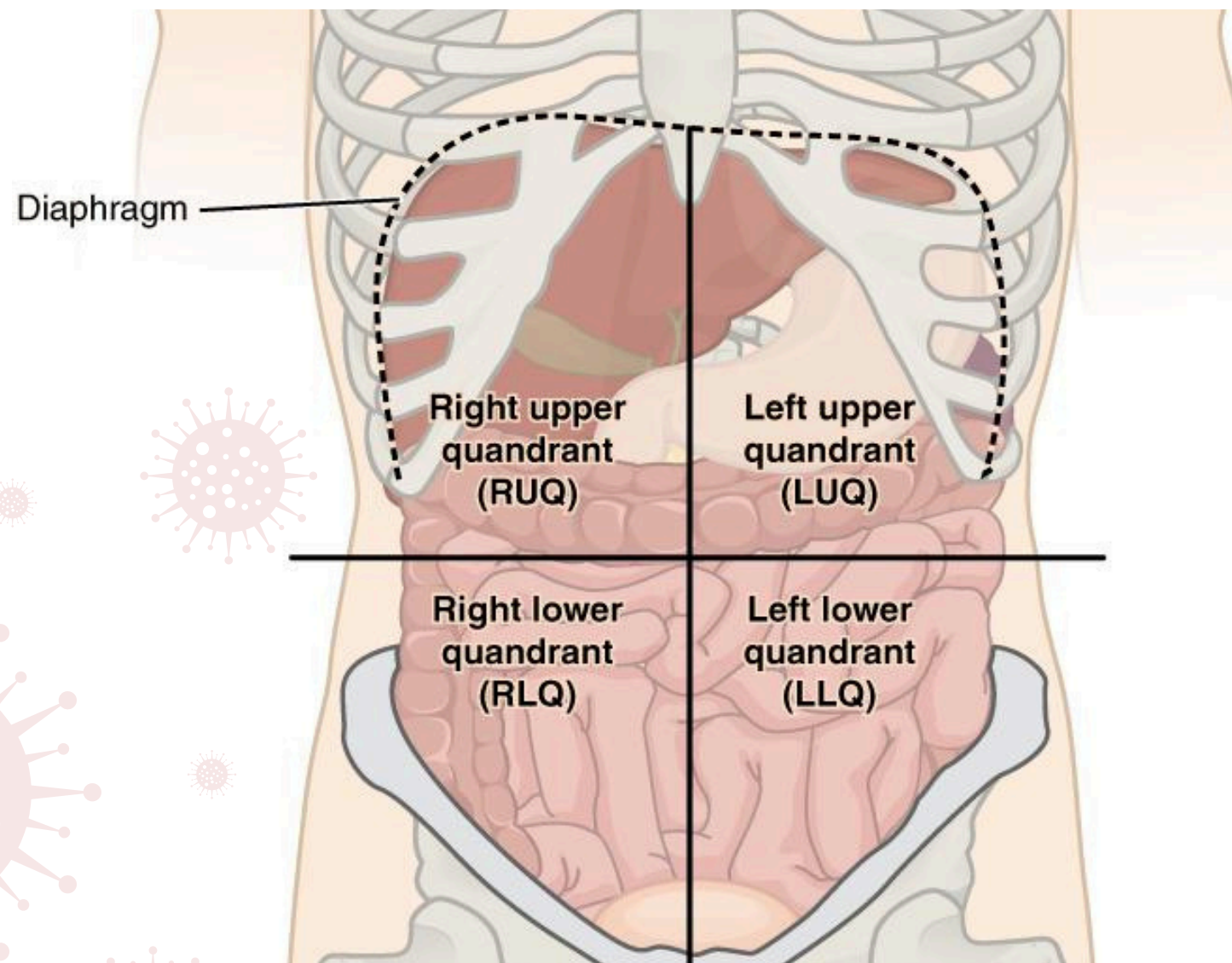
3. What is the proper sequence when performing an abdominal assessment?

- a. Percussion, Palpation, Auscultation, Inspection
- b. Inspection, Auscultation, Percussion, Palpation
- c. Inspection, Palpation, Percussion, Auscultation
- d. Auscultation, Inspection, Palpation, Percussion
- e. Palpation, Inspection, Percussion, Auscultation



»»

4. When the abdomen is divided into four quadrants, where should the nurse start auscultating?



- a. RLQ, RUQ, LUQ, LLQ
- b. LUQ, RUQ, RLQ, LLQ
- c. LLQ, RLQ, RUQ, LUQ
- d. RUQ, LUQ, LLQ, RLQ

...Keep it Moving!



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