

**UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DIETETICS AND HUMAN NUTRITION
EXAMINATION: NOVEMBER 2014
SUBJECT, COURSE, CODE: DIET 711 PY
THERAPEUTIC DIETETICS INTERNSHIP**

DURATION: 3 HOURS

TOTAL MARKS: 150

**External Examiner: Ms J. Visser
Internal Examiner: Mrs J. Galliers, Mrs S. Kassier**

NOTE: THIS PAPER CONSISTS OF TEN (10) PAGES, PLUS FIFTEEN (15) REFERENCE PAGES (ON YELLOW PAPER) AND APPENDIX I, II, III, IV AND V FOR CALCULATIONS (ON GREEN PAPER). PLEASE SEE THAT YOU HAVE THEM ALL.

INSTRUCTIONS:

- **Answer three (3) of the four (4) questions.**
- **Write your student number on all answer books as well as Appendix I, II, III, IV or V (Extra copies have been included in case you make a mistake).**
- **Do not write in pencil - it will not be marked.**
- **Answer each question in a separate answer booklet and leave enough space open so that you can answer questions in their correct sequence i.e. 4.1 followed by 4.2 etc.**
- **Write legibly- if it cannot be read it will not be marked.**

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Question 1

Mr Zungu, a 37 year old male, presents with abdominal distension, abdominal pain and diarrhoea. He reports to the admitting doctor that he has been experiencing these symptoms on and off for the last few months, although they have recently worsened. His sister, who lives with him, tells the doctor he has also lost weight on his arms and legs, yet his stomach is hard and protruding. She brought him to the hospital when he told her that he had noticed blood in his stool. Mr Zungu is RVD negative and has no previous medical history.

Weight: 55kg Height: 1.78m MUAC: 21cm TST: 5mm

Once admitted, a NGT is placed for drainage and 1000 ml of “coffee ground” fluid is drained in 24 hours.

1.1.1 What does the “coffee-ground” fluid drained from Mr Zungu’s gastrointestinal tract indicate? (2)

1.1.2 Your supervising Dietitian asks you on a ward round if you think Mr Zungu should start receiving enteral nutrition. What would you tell her? Motivate your answer. (3)

After various tests are done to rule out any other causes, Mr Zungu is diagnosed with Crohns disease. An endoscopy is conducted to determine the extent of the disease, and it is decided that part of Mr Zungu’s ileum and his colon need to be resected. An ileostomy will be created.

1.1.3 Define Crohns disease. (1)

1.1.4 Explain what an “ileostomy” is. (3)

1.1.5 Describe the difference between an “ostomy” and a fistula, and explain where fistula’s can occur. (6)

1.1.6 Mr Zungu now has an ileostomy bag and the drainage is approximately 1800 ml per 24 hours. You decide to feed via TPN. Using Appendix I, calculate his dietary requirements. Prescribe an appropriate TPN bag on Appendix I. (27)

1.1.7 The Sister in charge wants to know how long Mr Zungu is going to receive TPN for. Explain to her what your nutrition plan is. (4)

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The gentleman in the bed next door to Mr Zungu, Mr Chetty, recently underwent an operation referred to as a Bilroth II.

1.2 Give a brief description of what this operation entails, and give an example of a condition that could result in a Bilroth II needing to be performed. (3)

1.2.1 Mr Chetty has progressed onto the full ward diet a few days post surgery. He tells you that about 45 minutes after eating a meal he feels nauseous, fatigued, has abdominal cramps and fullness and an increased heart rate. What common complication of the Bilroth II operation is he experiencing? (1)

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Question 2

Miss Jockey is a 20 year old show jumper who fell off her horse at a show on Saturday, and was dragged for several minutes around the field, due to her foot getting stuck in the stirrup. She has multiple rib fractures, a fractured jaw, a fractured pelvis as well as bruises all over her body and face. She is unconscious with a GCS of 8/15.

On Monday morning you arrive in the ward and estimate her height with bed length at 1.66m tall. She appears to have a normal BMI and you estimate her weight to be approximately 58kg.

- 2.1.1 What factors do you need to consider when planning to feed Miss Jockey? (6)
- 2.1.2 What type of enteral feed would you use and why? (3)
- 2.1.3 Using Appendix II, calculate the patient's dietary requirements. (8)
- 2.1.4 The doctor informs you that she has a gastric ileus. What could have caused the ileus?
Give two possible reasons with solutions to overcome the feeding challenge of an ileus. (4)
- 2.1.5 One month later her GCS improves slightly to 12/15. Indicate what your feeding plan now is, and how would you go about initiating the feeding? (4)

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Mrs Waddle is a 49 year old mother of 5 children. She owns and runs a bakery in her local community and is on her feet baking from 5am through to 4pm. She is admitted to the medical ward for high blood pressure, high cholesterol and hyperglycaemia. The Sister in charge calls you to do an assessment on her.

You obtain the following information from her medical file:

Weight: 95kg Height: 1.62m tall.

She is mobile on the ward.

2.2.1 Comment on her anthropometric measurements and calculate her IBW. (5)

Her 24 hour recall diet history reveals:

| Time | Meal/snack |
|-------------|---|
| 5am | 1 cup of coffee made with ½ cup of full cream milk + 3 tsp of sugar + 1 tablespoon of cream. 2 buttermilk rusks for dunking. |
| 8am | A freshly baked choc chip muffin + 1 croissant with thinly spread butter + two thick slabs of cheese. 1 cup of warm milk to drink. |
| 11am | 1 cup of coffee made with ½ cup of full cream milk + 3 tsp of sugar + 1 tablespoon of cream. 1 wholewheat bread roll with thinly spread butter and honey + 1 sachet instant soup. |
| 1pm | 1 glass of water, 2 homemade biscuits (each one the size of a slice of bread) + 3 smarties on each biscuit + 1 banana + a handful of chopped nuts. |
| 3pm | 1 cup of coffee made with ½ cup of full cream milk + 3 tsp of sugar + 1 tablespoon of cream. 1 apple + 1 naartjie. |
| 6pm | 3 large lamb chops with crispy fat + 1 cup of fried potato chips, tomato sauce for dipping on the side + 4 slices of cucumber + 1 mealie on the cob + ½ cup cooked and diced carrots + ½ cup of cooked spinach. |
| 9pm | 1 custard slice (the size of 1 slice of bread folded over) 1 cup of coffee made with ½ cup of full cream milk + 3 tsp of sugar + 1 tablespoon of cream. |

She regularly snacks on prepared ingredients in her bakery such as chopped almonds and walnuts, Smarties, Astros, and choc chips. She likes to eat vegetables every night but only enjoys carrots, butternut, cucumber and spinach. On the weekend she eats biltong, fruits in season, salted popcorn, packet chips and every weekend her and her five children have a big family braai with potato salad, garlic bread and green salad. She enjoys battered fish on occasion and her favourite take away is KFC. She avoids all alcohol.

2.2.2 Comment on three (3) aspects of her diet she is doing correctly and three (3) aspects she is doing incorrectly for her diagnosed conditions. (6)

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THERAPEUTIC DIETETICS INTERNSHIP**

- 2.2.3 Give her 4 practical ideas on how she can modify her diet to make it healthier. (4)
- 2.2.4 Using Appendix III, calculate her nutritional requirements. (8)
- 2.2.5 Mrs Waddle asks you whether she is allowed to eat sugar. Explain your answer. (2)

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Question 3

Mrs Bezuidenhout is a 37 year old lady who is 18/40 weeks pregnant, P₃G₄. At her routine clinic visit a urine sample is taken, and her random glucose level is found to be 11mmol/l. The doctor orders a fasting glucose and HbA1C, which both confirm she has gestational diabetes.

Mrs Bezuidenhout is referred to the Dietetics department for dietary advice and counselling. She brings her blood results with her, and is very emotional and worried about her baby during the visit.

Current weight: 83kg

Pre-pregnancy weight: 78kg

Height: 1.71m

| Date | Glucose (mmol/l) | HbA1C (%) | Urea (mmol/l) | Creatinine (umol/l) |
|-----------|------------------|-----------|---------------|---------------------|
| 13/9/2014 | 10 | 8 | 1.5 | 48 |

- 3.1.1 What does “P₃G₄” mean? (2)
- 3.1.2 What does the HbA1C test tell you? (1)
- 3.1.3 Calculate and interpret her anthropometric status before pregnancy and during pregnancy. (6)
- 3.1.4 Calculate Mrs Bezuidenhout’s current ideal body weight for this stage of her pregnancy. Comment on any discrepancy between her actual body weight and ideal body weight. (7)
- 3.1.5 Why is it so important that the blood glucose levels in a gestational diabetic are well controlled? (9)
- 3.1.6 Comment on Mrs Bezuidenhout’s urea and creatinine levels, and provide an explanation for her results. (4)
- 3.1.7 Due to Mrs Bezuidenhout’s emotional state, you are unable to conduct a full counselling session with her, and you request she come back to see you on another day to discuss her diet in detail. Briefly describe a few important dietary changes you would like her to implement until her appointment with you. (3)

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Rose is a 2 year old girl who was abandoned at birth, and diagnosed as HIV positive at 6 months of age. She currently lives in a home for HIV positive children, but has been admitted to the paediatric ward at your hospital with recurrent diarrhoea and recurrent oral ulcerations. She is classified as stage 2 HIV.

You obtain the following information from her medical file:

Weight: 8.5kg Height: 0.82m MUAC: 10.8cm

Biochemistry:

| | Na (mmol/l) | K (mmol/l) | U (mmol/l) | Cr (umol/l) | TP (g/l) | Alb (g/l) | CD4 cells/mm ³ |
|------------|----------------|---------------|---------------|----------------|-------------|--------------|------------------------------|
| 12/10/2014 | 137 | 3.4 | 1 | 31 | 50 | 27 | 300 |

Medication: ABC + 3TC + EFV

3.2.1 Interpret Rose's anthropometric status. (10 x ½= 5)

3.2.2 Name the ARV medication Rose is receiving. Indicate any foods to avoid/recommendations, and nutritional side effects of these medications. (9)

3.2.3 What hospital ward diet would you order for Rose, and why? (4)

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Question 4

Mr Mtolo is a 58 year old male patient in the surgical ward, admitted for oesophageal cancer. When questioned about his diet history he reported having had very small amounts of yoghurt, maas and custard for the past 3 weeks, and being unable to tolerate any solid foods, water or juice. Although he is weak, he is able to stand on the scale and is able to walk to the bathroom unassisted.

Weight: 52kg Height: 1.74m MUAC: 21cm

The placing of a stent failed and now the doctors need your advice for long term feeding until the patient is strong enough to undergo a colonic interposition. They would like the patient to gain some weight before they perform the surgery.

- 4.1.1 Which feeding route would you choose to feed this patient? (1)
- 4.1.2 What type of feed would you choose, and give an example. (2)
- 4.1.3 At what rate will you increase the feed by? Motivate your answer. (2)
- 4.1.4 Comment on his anthropometric measurements. (5)
- 4.1.5 Using Appendix IV, calculate his energy and macronutrient requirements. (8)
- 4.1.6 What is a colonic interposition and how will you be able to feed postoperatively once the patient is stable? (2)
- 4.1.7 Show a 4 day plan of how you would calculate, and increase the feeding rate (using a 1kcal/ml feed). You must reach your maximum feeding rate on day 4. (5)

Toddler Byrnes is a 3 years and 3months old child who pulled a pot of boiling water off the stove onto her chest, stomach and upper thighs. She sustained 30% superficial burns. She weighs 14kg and is 105cm tall. She is admitted to the burns unit and needs your expertise.

- 4.2 .1 Using Appendix V calculate are her fluid, energy and macronutrient requirements? (9)
- 4.2.2 How would you feed this patient and why? (4)
- 4.2.3 Interpret her anthropometric measurements. (6)

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4.2.4 After feeding her at a rate of 20ml/hour for 4 hours, her GRV is 50ml. Is this acceptable? Explain why. (3)

4.2.5 Explain when Miss Byrnes can start Iron supplementation, and in what form it must be given in. (3)

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