HEALTH & FOOD TECHNOLOGY HIGHER

EXAM TECHNIQUE

ANSWERING THE NURITIONAL ANALYSIS QUESTION

Technique

Sample response for vitamin C

Too much/ too little information for each nutrient

The school canteen supervisor must meet the nutritional needs of the pupils.

Table 1

Dietary Reference Values for males aged 15–18 years					
Estimated Average Requirement	*Reference Nutrient Intakes*				
Energy (MJ)	*Protein (g)*	*Vitamin B2 (mg)*	*Vitamin C (mg)*	*Calcium (mg)*	*Sodium (mg)*
11.51	55.2	13.0	40	1000	1160

Table 2

Pupils' lunch choices

A survey of pupils' lunch choices showed that the following is the most popular choice with 15-year-old boys:

- Beef burger in a white bread roll with mayonnaise, cucumber slices and seasoned chips

Table 3

Dietary Analysis of Day's meals for a boy aged 15 years					
Energy (MJ)	*Protein (g)*	*Vitamin B2 (mg)*	*Vitamin C (mg)*	*Calcium (mg)*	*Sodium (mg)*
14.95	55.4	14.0	32	875	1490

In an Exam Question you will be asked to ANALYSE this information

Using **all** of the information on the previous page, analyse **three different** aspects of the 15-year-old boy's diet, in relation to the Dietary Reference Values for males aged 15–18 years.

For **each** aspect of his diet you have identified, your analysis should include:

- a comment on the impact of his diet in relation to the Dietary Reference Values
- a potential consequence for his health
- a conclusion about the contribution made by his lunch choice to his food intake

NOTE- TECHNIQUE

Aspect of diet – identify nutrient being analysed

Explanation of intake linked to the DRV - as well as stating of the intake is high or low think about what may happen in the short term

Potential consequence for health – think about the longer term effect and give at least 2 bits of connecting / supporting information

Contribution to diet made by food choice- identify foods from the selection given and link to the low or high intake of the nutrient being discussed.

When referring to energy and protein intake, consider both as the secondary function of protein is to provide energy and this may help boost energy levels.

Suitable responses to meet the standard might be:

Aspect of diet: Vitamin C.

Explanation of intake linked to the DRV: His vitamin C intake is too low. This could lead to him readily picking up common infections like the cold.

Potential consequence for health: As Vitamin C in an anti-oxidant this could lead to increased risk of heart disease and cancer in later life as the free radicals in the body are not mopped up and can cause damage to cells in the body.

Contribution to diet made by food choice: The cucumber and potato will contain only a small amount of vitamin C and is contributing to his low Vitamin C intake.

MARKS AVAILABLE – 3 nutrient intakes analysed for 3 marks each, giving a total of 9 marks

PROTEIN

TOO MUCH	*TOO LITTLE*
Short term : for a child or teenager this is needed for growth spurts/ invalids for repair of cells for healing but for others could provides energy to enable you to be active but if this is not used up then it is converted and stored as fat which will lead to weight gain	**Short term :** slow healing, tiredness
Long term: obesity (which may cause joint pain, breathlessness, increased risk of HBP and CHD)	**Long term:** poor/stunted growth

FAT

TOO MUCH	*TOO LITTLE*
Short term : provides energy to enable you to be active but if this is not used up then it is stored as fat which will lead to weight gain	**Short term :** tiredness, lethargy, unable to take part in activities
Long term: obesity and CHD as excess is stored by the body	**Long term:** lose weight as the body uses up stored fat, feel cold

CARBOHYDRATE

TOO MUCH	*TOO LITTLE*
Short term : provides energy to enable you to be active but if this is not used up then it is converted and stored as fat which will lead to weight gain	**Short term :** tiredness, lethargy, unable to take part in activities
Long term: obesity and CHD	**Long term:** lose weight as body uses up stores

ENERGY

TOO MUCH	*TOO LITTLE*
Short term : lots of energy for activities but if not used up then will lead to weight gain as stored as fatty layer	**Short term :** tiredness, lethargy, unable to take part in activities
Long term: obesity and CHD	**Long term:** lose weight as body uses up stores

VITAMIN A

TOO MUCH	*TOO LITTLE*
Short term : can be dangerous in pregnancy and lead to birth defects (Spina Bifida) Good vision in dim light as it makes visual purple pigment	**Short term :** poor vision in dim light (Night blindness) due to lack of visual purple
Long term: decreased risk of CHD and cancer as is an ACE Vitamin	**Long term:** increased risk of CHD and cancer as is an ACE vitamin

VITAMIN B 1,2,3

TOO MUCH	*TOO LITTLE*
Short term : lots of energy	**Short term :** tiredness, lethargy, unable to take part in activities
Long term: good functioning of the nervous system	**Long term:** extreme lethargy

VITAMIN B12

TOO MUCH	*TOO LITTLE*
Short term : good functioning of the nervous system	**Short term :** poor functioning of the nervous system
Long term: anaemia	**Long term:** anaemia

FOLIC ACID

TOO MUCH	*TOO LITTLE*
Short term : provides sufficient red blood cells in haemoglobin so carry out activities without feeling tired	**Short term :** tiredness, lethargy, unable to take part in activities
Long term: prevention of neural tube defect (spina bifida) in unborn babies	**Long term:** spina bifida in unborn babies

VITAMIN C

TOO MUCH	*TOO LITTLE*
Short term : quick healing of cuts and wounds, prevents infections, helps ensure sufficient absorption of iron	**Short term :** slow healing of cuts and wounds, risk of infections
Long term: decreased risk of CHD and cancer as is an ACE Vitamin which help mop up the free radicals in the body decreased risk of anaemia because sufficient iron absorbed	**Long term:** increased risk of CHD and cancer as is an ACE vitamin so insufficient to mop up free radicals in the body

VITAMIN D

TOO MUCH	*TOO LITTLE*
Short term : strong bones and teeth, sufficient bone density	**Short term :** more likely to break a bone, tooth decay, weak bones
Long term: prevents against developing osteoporosis	**Long term:** osteoporosis in later life

VITAMIN E

TOO MUCH	*TOO LITTLE*
Short term : good maintenance of cells membranes	**Short term :** poor maintenance of cells membranes
Long term: decreased risk of CHD and cancer as is an ACE Vitamin	**Long term:** increased risk of CHD and cancer as is an ACE vitamin

CALCIUM AND PHOSPHORUS

TOO MUCH	*TOO LITTLE*
Short term: strong bones and teeth	**Short term :** weak bones and tooth decay
Long term: reduced risk of developing osteoporosis in later life	**Long term:** osteoporosis in later life

IRON

TOO MUCH	*TOO LITTLE*
Short term : body is able to make red blood cells	**Short term :** tiredness, pale skin, breathlessness
Long term: reduced risk of anaemia	**Long term:** anaemia as boy struggles to produce enough haemoglobin

SODIUM

TOO MUCH	*TOO LITTLE*
Short term : hypertension	**Short term :** muscle cramps
Long term: strokes due to increased blood pressure	**Long term:** muscle cramps

NSP/FIBRE

TOO MUCH	*TOO LITTLE*
Short term : feeling of fullness, reduced risk of constipation	**Short term :** constipation
Long term: bloatedness, diarrhoea	**Long term:** diverticular disease, bowel cancer

Sample questions are available in the homework booklet and from the class teacher.