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NAME : XXXXXXXXXXXXXXXX
REF. BY : XXXXXXXXXXXXXXXX
TEST ASKED : COMPLETE VITAMINS PROFILE

SAMPLE COLLECTED AT :
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TEST NAME	TECHNOLOGY	VALUE	UNITS
VITAMIN A	LC-MS/MS	576.17	ng/mL

Bio. Ref. Interval. :-

Age	Reference range
1 - 6 Years	200 - 400
7 - 12 Years	260 - 490
13 - 19 Years	260 - 720
Above 18 Years	300 - 800

Clinical Significance:

Vitamin A or Retinol plays important role in the function retinal vision, growth, reproduction, embryonic development as well as in immune function. Vitamin A is also required for adaptive immunity and plays a role in the development of both T- helper cells and B-cells. Retinol and its metabolites and synthetic retinoids provide protective effects against the development of certain types of cancer by blocking tumor promotion, by inhibiting proliferation, by inducing apoptosis, by inducing differentiation or by performing combination of these actions.

Fat malabsorption, particularly caused by celiac disease or chronic pancreatitis and protein -energy malnutrition predispose to vitamin A deficiency. Clinical features of vitamin A deficiency include degenerative changes in eyes and skin and poor dark adaptation or night blindness. Vitamin A deficiency impairs innate immunity by impeding normal regeneration of mucosal bariers damaged by infection and by diminishing the function of neutrophils, macrophages and natural killer cells.

Toxic effects of hypervitaminosis A have occurred as a result of ingestion of excess vitamin or as a side effect of inappropriate therapy. Symptoms of acute toxicity from single massive dose present as abdominal pain, nausea,, vomiting, severe headache, dizziness, sluggishness and irritability. Chronic toxicity shows symptoms like bone, join pain, hair loss, dryness and fissures of the lips, anorexia, benign intracranial hypertension, weight loss an hepatomegaly.

Clinical reference:

Tietz Textbok of clinical chemistry and Molecular diagnostic, Carl A. Burtis, Edward R. Ashwood, David E. Bruns, Fifth edition., Elsevier.

Please correlate with clinical conditions.
Method:- LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY

Dummy Report

Sample Collected on (SCT) : Sample collection time
Sample Received on (SRT) : Sample receiving time at Lab
Report Released on (RRT) : Report release time
Sample Type : SERUM
Labcode :
Barcode :

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SAMPLE COLLECTED AT :
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TEST NAME	TECHNOLOGY	VALUE	UNITS
VITAMIN E	LC-MS/MS	18398.3	ng/mL

Bio. Ref. Interval. :-

Age	
< 1 Month	1000 - 3500
2 - 5 Months	2000 - 6000
6 M - 1 year	3500 - 8000
2 - 12 years	5500 - 9000
Above 13 years	5500 - 18000

Clinical Significance: Vitamin E or Alpha-tocopherol (body's main form of vitamin) function as antioxidant which protects vitamin A, C and red blood cells from oxidative damage caused by free radicals. It has been recognized as necessary for neurologic and reproductive functions, for prevention of retinopathy in premature infants. Alpha-tocopherol also induces inhibition of cell proliferation, platelete aggregation, and monocyte adhesion, which are thought to be the results of direct interaction of alpha-tocopherol with cell components. Alpha-tocopherol reduces inflammatory mediator production.

Premature and low birth weight infants are particularly susceptible to development of vitamin E deficiency, because placental transfer is poor and infants have such limited adipose tissue where much of the vitamins is normally stored. Signs of deficiency include irritability, edema and hemolytic anemia. Although symptoms of vitamin E deficiency are rare in children and adults, deficiency can occur in some conditions.

Excess vitamin E intake usually is achieved only by dietary supplementation. A comprehensive review of tolerance and safety of vitamin E suggested that intakes upto 3000mg/d were safe and reversible side effects of gastrointestinal symptoms, increased creatinuria, and impairment of blood coagulation are seen at intakes of 1000-3000 mg/d. However as noted earlier, long term use of intakes greater than 400mg/d may cause increased mortality.

Clinical reference: Tietz Textbok of clinical chemistry and Molecular diagnostic, Carl A. Burtis, Edward R. Ashwood, David E. Bruns, Fifth edition., Elsevier.

Please correlate with clinical conditions.
Method:- LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY

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SAMPLE COLLECTED AT :
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TEST NAME	TECHNOLOGY	VALUE	UNITS
VITAMIN K	**LC-MS/MS**	**1.38**	**ng/mL**

Bio. Ref. Interval. :-

0.13 - 1.19

Clinical significance:

Vitamin K assay measures the principal form of vitamin K i.e. K1 :Phylloquinone which found predominantly in green leafy vegetables, margarines and plant oils.

Vitamin K promotes clotting of the blood, is required for the conversion of several clotting factors and prothombin, and is of growing interest in bone metabolism. Vitamin K plays important role in the deposition of ionic calcium needed for proper blood coagulation and bone formation.

Although vitamin K deficiency in the adults is uncommon, the risk is increased for fat malabsorption states such as bile duct obstruction,cystic fibrosis, chronic pancreatitis and liver disease. Risk also increased by the use of drugs that interfere with vitamin K metabolism, such as warfarin, cepahlosporin. Defective blood coagulation and demonstration of abnormal noncarboxylated prothrombin are at present the only well-established signs of vitamin K deficiency.

The use of high doses of naturally occurring vitamin K (K1 and K2) appears to have no untoward effect; however menadione(K3) treatment can lead to formation of erythrocyte cytoplasmic inclusions known as Heinz bodies and hemolytic anemia. With severe hemolysis, increase bilirubin formation and undeveloped capacity for its conjugation may produce kernicterus in the newborn.

Clinical reference:

Tietz Textbok of clinical chemistry and Molecular diagnostic, Carl A. Burtis, Edward R. Ashwood, David E. Bruns, Fifth edition., Elsevier.

Please correlate with clinical conditions.
Method:- LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY

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TEST ASKED : COMPLETE VITAMINS PROFILE

SAMPLE COLLECTED AT :

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TEST NAME	TECHNOLOGY	VALUE	UNITS	Bio. Ref. Interval.
VITAMIN B-12	E.C.L.I.A	256	pg/mL	197-771
VITAMIN B1/THIAMIN	LC-MS/MS	1.16	ng/mL	0.5-4.0
VITAMIN B2/RIBOFLAVIN	LC-MS/MS	10.55	ng/mL	1.6-68.2
VITAMIN B3/NICOTINIC ACID	LC-MS/MS	3.01	ng/mL	0.3-9.8
VITAMIN B5/PANTOTHENIC	LC-MS/MS	28.64	ng/mL	11-150
VITAMIN B6/P5P	LC-MS/MS	14.87	ng/mL	5 - 50
VITAMIN B7/BIOTIN	LC-MS/MS	0.66	ng/mL	0.2-3
VITAMIN B9/FOLIC ACID	LC-MS/MS	0.75	ng/mL	0.2-20

Please correlate with clinical conditions.

Method :

VITB - Fully Automated Electrochemiluminescence Compititive Immunoassay
VITB1 - LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY
VITB2 - LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY
VITB3 - LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY
VITB5 - LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY
VITB6 - LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY
VITB7 - LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY
VITB9 - LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY

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TEST ASKED : COMPLETE VITAMINS PROFILE

SAMPLE COLLECTED AT :
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TEST NAME	TECHNOLOGY	VALUE	UNITS
VITAMIN D2	LC-MS/MS	0.92	ng/mL
Method : LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY			
VITAMIN D3	LC-MS/MS	18.84	ng/mL
Method : LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY			
VITAMIN D TOTAL	**LC-MS/MS**	**19.76**	**ng/mL**

Bio. Ref. Interval. :
Deficiency : <20 ng/mL
Insufficiency : 20-30 ng/mL
Sufficiency : 30-100 ng/mL
Toxicity : >100 ng/mL
Method : Liquid Chromatography Tandem Mass Spectrometry

Please correlate with clinical conditions.

~~ End of report ~~

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