MAYO CLINIC
Mayo Medical Laboratories

Laboratory Service Report 1-800-533-1710

Patient Name	Patient ID	Age	Gender	Order #
TEST,IMPLEMENTATION TESTING	321	61	F	M102729028
Ordering Phys TESTING				**DOB** 12/07/1950
Client Order # M102729028	**Account Information**			**Report Notes**
Collected 04/17/2012 07:20	C7028846-DLMP ROCHESTER 3050 SUPERIOR DRIVE ROCHESTER,MN 55901			
Printed 04/17/2012 13:39				

Test	Flag	Results	Unit	Reference Value	Perform Site*
Humoral Immunity Status Survey 7			REPORTED 04/17/2012 10:38		
Diphtheria Antitoxoid, ELISA		<0.01	IU/mL		Y038

REFERENCE RANGE: > or = 0.01 IU/mL (Post-Vaccination)

INTERPRETIVE CRITERIA:

<0.01 IU/mL Nonprotective Antibody Level
> or = 0.01 IU/mL Protective Antibody Level

A minimal four-fold increase between pre-immune and post-immunization sera is considered a normal response to diphtheria toxoid.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Strep Pneumoniae IgG Ab(7Sero),MAID					
Serotype 1 (1)		3.2	mcg/mL		Y038
Serotype 3 (3)		3.6	mcg/mL		Y038
Serotype 9 (9N)		3.4	mcg/mL		Y038
Serotype 14 (14)		3.2	mcg/mL		Y038
Serotype 19 (19F)		1.6	mcg/mL		Y038
Serotype 23 (23F)		5.6	mcg/mL		Y038
Serotype 26 (6B)		5.2	mcg/mL		Y038

Note: Serotype designations are American nomenclature, with Danish nomenclature in parentheses.

Studies from the 1980's using radioimmunoassay suggested that vaccine-induced S. pneumoniae type-specific antibody levels of approximately 2.0 mcg/mL were protective against invasive pneumococcal disease. Newer methods (ELISA and multiplexed immunoassay) incorporating an absorption step to remove cross-reactive

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* Report times for Mayo performed tests are CST/CDT

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antibodies yield results that are comparable to each other, but are lower than those obtained with the original radioimmunoassay. Rigorous studies of protective antibody levels as determined by the newer methods have not been performed. In addition to antibody quantity, protection also depends on antibody avidity and opsonophagocytic activity.

Evaluation of the response to pneumococcal vaccination is best accomplished by comparing pre-vaccination and post-vaccination antibody levels. A 2- to 4-fold increase in type-specific antibodies measured 4-6 weeks after vaccination is expected in immunocompetent adults. The number of serotypes for which a 2- to 4-fold increase is observed varies greatly among individuals; a consensus panel has suggested that individuals older than 5 years should respond to at least approximately 70% of pneumococcal serotypes. Adults >65 years old may exhibit a smaller (<2-fold) increase in type-specific antibody levels.

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Tetanus Antitoxoid, ELISA

Tetanus Antitoxoid Ab, ELISA		<0.05	IU/mL		Y038

REFERENCE RANGE:
> or = 0.50 IU/mL (Post-Vaccination)

INTERPRETIVE CRITERIA:

<0.05 IU/mL	Nonprotective Antibody Level
0.05 - 0.49 IU/mL	Indeterminate for Protective Antibody
> or = 0.50 IU/mL	Protective Antibody Level

A minimal four-fold increase between pre-immunization and post-immunization sera is considered a normal response to tetanus toxoid. Levels greater than or equal to 0.50 IU/mL are generally considered protective, whereas levels

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less than 0.05 IU/mL indicate a lack of protective antibody. Levels between 0.05 and 0.49 IU/mL are indeterminate for the presence of protective antibody and may indicate a need for further immunization to tetanus toxoid.					
This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.					
IgA, Neph		70	mg/dL		Y038
IgG, Neph		1200	mg/dL		Y038
IgM, Neph		150	mg/dL		Y038

REFERENCE RANGES:

IMMUNOGLOBULINS:	IgG mg/dL	IgA mg/dL	IgM mg/dL
CORD BLOOD	510 - 1275	0	0 - 19
1 - 3 Months	127 - 553	0 - 19	10 - 78
4 - 6 Months	119 - 425	2 - 35	15 - 72
7 - 14 Months	230 - 808	10 - 50	21 - 109
15 - 35 Months	365 - 1063	17 - 70	23 - 134
3 - 12 Years	467 - 1275	23 - 208	27 - 184
ADULT	680 - 1445	70 - 407	33 - 248
CSF	0.0 - 6.6		

IgG Subclasses, NEPH					
IgG Subclass 1		645	mg/dL		Y038
IgG Subclass 2		46	mg/dL		Y038
IgG Subclass 3		44	mg/dL		Y038
IgG Subclass 4		11	mg/dL		Y038
Total IgG		654	mg/dL		Y038

Reference ranges: mg/dL

Age	IgG1	IgG2	IgG3	IgG4	Total IgG
0-2 years	170-950	21-440	13-69	1-120	230-1400

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2-4 years	290-1065	28-315	3-71	1-90	353-1350
4-6 years	330-1065	56-345	7-126	2-116	463-1504
6-8 years	225-1100	42-375	9-107	1-138	288-1374
8-10 years	390-1235	61-430	10-98	1-95	390-1653
10-12 years	380-1420	73-455	16-194	1-153	579-1742
12-14 years	165-1440	71-460	11-178	1-143	772-1793
14-18 years	155-1020	43-495	7-209	4-163	223-1540
Adult	240-1117	124-549	21-134	7-89	680-1445

Decreased or absent IgG subclass levels have been associated with recurrent pyogenic infections and repeated respiratory tract infections. IgG2 deficiency is associated with IgA deficiency, and with decreased immune responses to carbohydrate antigens (for example, pneumococcal and Haemophilus influenzae polysaccharides). A decreased level of a specific IgG subclass may not be reflected in the total IgG quantitiation.

IgE, NEPH		<1.5	IU/mL		Y038

REFERENCE RANGE:

NEONATES		<1.5	IU/mL
<1	YEAR	<15	IU/mL
1-5	YEARS	<60	IU/mL
6-9	YEARS	<90	IU/mL
10-15	YEARS	<200	IU/mL
>15	YEARS	<100	IU/mL

IgE levels are significantly elevated in most patients with allergic rhinitis, extrinsic urticaria, and atopic eczema. Elevated IgE levels are also found in parasitic diseases and some types of immunodeficiency diseases (Wiskott-Aldrich Syndrome, DiGeorge Syndrome, and hyper-IgE syndrome).

* Performing Site:

Y038	Focus Diagnostics Inc. 5785 Corporate Avenue Cypress, CA 90630-4750	Lab Director: