



110 West Cliff Avenue  
Spokane, WA 99204

509.755.8600  
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# TEST CHANGE ALERT #352

## October 19, 2009

### Summary Of Changes

TestCode(s)	Test Description
ANEMPR	ANEMIA PROFILE (Reference Ranges)
COUM	COUMADIN (Specimen Requirements, Reference Range)
FORM-U (FAUQ)	FORMIC ACID, URINE (Method, Specimen Requirements, Reference Range)
HCVPGT	HCV RNA QUANT BY PCR RELFEX TO GENOTYPING (Publish CPT Code)
HISAG	HISTOPLASMA ANTIGEN (Specimen Requirements)
INSUAB	INSULIN ANTIBODIES, SERUM [MML] (Specimen Requirements, Reference Range)
KELL.AG (KELLAG)	KELL ANTIGEN (Specimen Requiements)
NMRLIP	NMR LIPOPROFILE (New)
ORAL5	ORAL FLUID 5 (REFLEXIVE) (New)
SIR	SIROLIMUS(Compliance Statement)
SS.LAP (LAP)	LEUK ALK PHOS STAIN (Specimen Requirements)
TESBFC	TESTOSTERONE, BIO&TOT+SHBG,CHILD+FEMALE (Add Male Reference Ranges)
TSH3G	THYROID STIMULATING HORMONE 3RD GENERATION (New)
TSHGAR	THYROID STIMULATING HORMONE 3RD GENERATION (Delete)



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The following tables reflect revisions only; other existing data remain unchanged.

### ANEMPR

order code

### ANEMPR

flexilab code

### ANEMIA PROFILE (Reference Ranges)

Effective	11/17/2009			
Reference Ranges				
WBC			see WBC for ranges	K/uL
RBC			see RBC for ranges	M/uL
HGB			see HGB for ranges	g/dL
HCT			see HCT for ranges	%
MCV		0-3 days	95.0-121.0	fL
		3-7 days	88.0-126.0	
		7-14 days	86.0-124.0	
		14-30 days	85.0-123.0	
		30-60 days	77.0-115.0	
		2-6 mo	74.0-108.0	
		6-24 mo	70.0-86.0	
		2-6 yrs	75.0-87.0	
		6-12 yrs	77.0-95.0	
	F	12-18 yrs	78.0-102.0	
	M	12-18 yrs	78.0-98.0	
		18 yrs+	80.0-100.0	
MCH		0-3 days	31.0-37.0	pg
		3-30 days	28.0-37.0	
		30-60 days	26.0-34.0	
		2-6 mo	25.0-35.0	
		6-24 mo	23.0-31.0	
		2-6 yrs	24.0-30.0	
		6-12 yrs	25.0-33.0	
		12-18 yrs	25.0-35.0	
		18 yrs+	27.0-34.0	
MCHC		0-3 days	29.0-37.0	g/dL
		3-14 days	28.0-37.0	
		14-60 days	29.0-37.0	
		2-24 mo	30.0-36.0	
		2-18 yrs	31.0-37.0	
		18 yrs+	32.0-35.5	
RDW		0-7 days	11.0-18.0	%
		7-60 days	11.0-17.0	
		2-6 mo	11.0-16.5	
		6-24 mo	11.0-16.0	
		2-6 yrs	11.0-15.0	
		6-18 yrs	11.0-14.5	
		18 yrs+	11.0-15.0	
PLT			see PLT for ranges	K/uL
Reticulocyte Count, Percent		0-2 days	3.0-7.0	%
		3-6 days	1.0-3.0	
		7 days-1 mon	0.0-1.0	
		2 mon-4 years	1.0-2.0	
		5+ years	0.4-2.7	

Reticulocyte, Absolute		5+ years	16-123	K/uL
Immature Retic Fraction		1+ years	0.17-0.43	
Total Iron	M		35-190	ug/dL
	F		30-150	
Iron Binding Capacity	M		230-430	ug/dL
	F		250-450	
% Saturation	M		20-55	%
	F		15-50	
Direct Coombs			Negative	
<i>Interpretation</i>			<i>No longer reported</i>	
<i>Reviewed by</i>			<i>No longer reported</i>	

## COUM

## COUM

COUMADIN (Specimen Requirements, Reference Range)

order code

flexilab code

Effective	11/17/2009			
Comments	1) Min Amt: 1 mL. 2) <i>Unacceptable conditions: SST tubes.</i> 3) MAYO# 8760.			
Reference Ranges	<i>Coumadin</i>	<i>Therapeutic</i>	<i>2.0-5.0</i>	<i>mcg/mL</i>
		Toxic	10.0 or greater	

## FORM-U

## FAUQ

FORMIC ACID, URINE (Method, Specimen Requirements, Reference Range)

order code

flexilab code

Effective	01/04/2010			
Method	<i>GC</i>			
Specimen Requirements	5 mL urine. Collect prior to the last shift of workweek. <i>Store &amp; transport refrigerated.</i>			
Comments	1) When Formaldehyde is requested, order Formic Acid. 2) NMS# 2134U. 3) <i>Stability: RT-1week, Refrigerated-1 week, Frozen-10 months.</i>			
Reference Ranges	Total Volume			mL
	Coll Period			H
	Creatinine, Ur		ACGIH normal range in adults: 300-3400 mg/L (Mean: 1000 mg/L) 0.3-3.4 g/L (Mean: 1 g/L) 1000-1600 mg/day (1.0-1.6 g/day)	mg/L
	Formic Acid, Urine		5-36 mcg/mL Normal range for 95% of population.	mcg/mL
	<i>Formic Acid, Urine</i>			<i>mg/gCr</i>

**HCVPGT****HCVPGT**HCV RNA QUANT BY PCR RELFEX TO  
GENOTYPING (Publish CPT Code)

order code

flexilab code

Effective	Immediately
CPT4	87522

**HISAG****HISAG**

HISTOPLASMA ANTIGEN (Specimen Requirements)

order code

flexilab code

Effective	Immediately
Specimen Requirements	2 mL serum (red top tube). Separate serum from cells and put in separate plastic tube. Identify source if other than serum. Store and transport refrigerated.
Comments	1) <i>Min Amt: 1.5 mL.</i> 2) Other acceptable specimens: urine, CSF, BAL <i>or other sterile fluid.</i> 3) <i>Stability: Refrigerated-1 month, Frozen-indefinitely.</i> 4) MiraVista Diagnostics.

**INSUAB****INSUAB**INSULIN ANTIBODIES, SERUM [MML] (Specimen  
Requirements, Reference Range)

order code

flexilab code

Effective	10/23/2009		
Specimen Requirements	1 mL serum (red top tube). Draw from a fasting patient. Separate serum from cells and put in separate plastic tube. <i>Store and transport refrigerated.</i>		
Comments	1) <i>Min Amt: 0.5 mL.</i> 2) Other acceptable specimens: SST. 3) Unacceptable specimens: grossly hemolyzed specimens. 4) <i>Stability: RT-3 days, Refrigerated-3 days.</i> 5) MAYO# 8666.		
Reference Ranges	Insulin Antibodies, Serum <i>Insulin</i> Antibodies, Human		0.00-0.02  This test was developed and its performance characteristics determined by Laboratory Medicine & Pathology, Mayo Clinic, Rochester, MN. This test has not been cleared or approved by the U.S. Food and Drug Administration.
			<i>nmol/L</i>

**KELL.AG****KELLAG**

KELL ANTIGEN (Specimen Requirements)

order code

flexilab code

Effective	Immediately
Specimen Requirements	5 mL whole blood (red top tube) and 5 mL EDTA whole blood (lavender top tube). Do not use SST tube. Store & transport refrigerated or at room temperature.

**NMRLIP**  
order code

**NMRLIP**  
flexilab code

NMR LIPOPROFILE (New)

Effective	11/17/2009			
Method	<i>Spectrophotometric</i>			
CPT4	<i>83704, 80061</i>			
Specimen Requirements	<i>2 mL serum (plain red top tube). Separate serum from cells within 4 hours of collection and put in separate plastic tube. Store and transport refrigerated. Collect and send to PAML Monday through Wednesday due to stability. Cannot ship to Liposcience on Fridays or holidays.</i>			
Comments	<i>1) Min Amt: 2 mL. 2) Other acceptable specimens: EDTA plasma (lavender top tube) or NMR Lipotube (Invert tube to mix contents and allow to clot at RT for 30 minutes. Centrifuge for 15 minutes at 3,000 rpm within 4 hours of collection) and then handled the same as the serum sample above. 3) Unacceptable conditions: frozen specimens or SST tubes or PST tubes. 4) Stability: RT-unacceptable, Refrigerated-4 days, Frozen-unacceptable. 5) LIPOSCIENCE# 220.</i>			
Reference Ranges	<i>LDL-P</i>	<i>Optimal Near or above optimal Borderline-high High Very High</i>	<i>LT 1000 1000-1299 1300-1599 1600-2000 GT 2000</i>	<i>nmol/L</i>
	<i>Small LDL-P</i>	<i>Low Moderate Borderline-high High</i>	<i>LT 600 600-849 850-1200 GT 1200</i>	<i>nmol/L</i>
	<i>LDL-C</i>	<i>Optimal Near or above optimal Borderline-high High Very High</i>	<i>LT 100 100-129 130-159 160-189 190 or more</i>	<i>mg/dL</i>
	<i>HDL-C</i>	<i>Desirable</i>	<i>40 or more</i>	<i>mg/dL</i>
	<i>Triglycerides</i>	<i>Desirable</i>	<i>LT 150</i>	<i>mg/dL</i>
	<i>Total Chol</i>	<i>Desirable</i>	<i>LT 200</i>	<i>mg/dL</i>
	<i>LDL Particle Size</i>			<i>nm</i>
	<i>Large HDL-P</i>			<i>umol/L</i>
	<i>Large VLDL-P</i>			<i>nmol/L</i>
	<i>Comment</i>			

**ORAL5**  
order code

**ORAL5**  
flexilab code

ORAL FLUID 5 (REFLEXIVE) (New)

Effective	11/17/2009
Method	<i>Tandem Mass Spectrometry/GC</i>
CPT4	<i>80101 x 5, 80102</i>
Specimen Requirements	<i>3 mL oral fluid. Ensure that donor has had nothing in their mouth for at least ten (10) minutes before sample collection. Have donor drink 3 ounces of pure water at least five (5) minutes before sample</i>

	<i>collection. Directly observe the donor during sample collection. Use oral sample collection kit. Encourage donor to pucker their mouth to accumulate oral fluid prior to expressing oral fluid into collection vial. Repeat 3-5 times until at least 2 mL are collected. Complete chain of custody forms and label vials. Follow collection &amp; submission directions in kit. Store &amp; transport RT. This test may reflex to additional tests depending upon the results of this test.</i>			
Comments	<i>1) Min Amt: 2 mL. 2) Unacceptable conditions: frozen samples. 3) Collection kits available from PAML Supply Department. 4) Send specimens using 1-2 day delivery. 5) USDTL.</i>			
Other	<i>This test was developed and its performance characteristics determined by United States Drug Testing Laboratories.</i>			
Reference Ranges	<i>Amphetamine</i>		<i>Positive Cutoff 50</i>	<i>ng/mL</i>
	<i>Amphetamine</i>		<i>Positive Cutoff 15</i>	<i>ng/mL</i>
	<i>Methamphetamine</i>		<i>Positive Cutoff 11</i>	<i>ng/mL</i>
	<i>MDA</i>		<i>Positive Cutoff 12</i>	<i>ng/mL</i>
	<i>MDMA</i>		<i>Positive Cutoff 13</i>	<i>ng/mL</i>
	<i>Cocaine</i>		<i>Positive Cutoff 20</i>	<i>ng/mL</i>
	<i>Benzoyl-ecgonine</i>		<i>Positive Cutoff 3</i>	<i>ng/mL</i>
	<i>Cocaine</i>		<i>Positive Cutoff 2</i>	<i>ng/mL</i>
	<i>Opiates</i>		<i>Positive Cutoff 40</i>	<i>ng/mL</i>
	<i>Codeine</i>		<i>Positive Cutoff 3</i>	<i>ng/mL</i>
	<i>Morphine</i>		<i>Positive Cutoff 3</i>	<i>ng/mL</i>
	<i>Hydrocodone</i>		<i>Positive Cutoff 3</i>	<i>ng/mL</i>
	<i>Hydromorphone</i>		<i>Positive Cutoff 4</i>	<i>ng/mL</i>
	<i>6-MAM</i>		<i>Positive Cutoff 3</i>	<i>ng/mL</i>
	<i>Oxycondone</i>		<i>Positive Cutoff 3</i>	<i>ng/mL</i>
	<i>PCP</i>		<i>Positive Cutoff 10</i>	<i>ng/mL</i>
	<i>Phencyclidine</i>		<i>Positive Cutoff 10</i>	<i>ng/mL</i>
	<i>Cannabinoids</i>		<i>Positive Cutoff 4</i>	<i>ng/mL</i>
	<i>Native THC</i>		<i>Positive Cutoff 2</i>	<i>ng/mL</i>
	<i>Certification</i>		<i>This test was developed and its performance characteristics determined by United States Drug Testing Laboratories.</i>	

**SIR**  
order code

**SIR**  
flexilab code

**SIROLIMUS(Compliance Statement)**

Effective	<b>Immediately</b>
Compliance(LD TB) PAML/SHMC	<i>This test was developed and its performance characteristics determined by PAML/PSHMC Division of Laboratory Medicine. The U.S. Food and Drug Administration (FDA) has not approved or cleared this test. However, FDA approval or clearance is currently not required for clinical use of this test. The results are not intended to be used as the sole means for clinical diagnosis or patient management decisions. PAML/PSHMC is authorized under Clinical Laboratory Improvement Amendments (CLIA) to perform high-complexity testing.</i>

Effective	11/17/2009
Specimen Requirements	3 mL EDTA whole blood (lavender top tube) & 3 well-made blood smears, tissue preps, or bone marrow coverslips from non-anticoagulated blood OR one sodium heparin tube (green top tube). If EDTA tube is not available, please include CBC results from day of collection. Store & transport at RT. Protect slides from light. Slides must be processed within a maximum of 12 hrs of collection. Slides processed within 8 hrs of collection are optimal. <i>If transportation is a problem, a sodium heparin tube can be sent with slides.</i> Indicate source.

TESBFC

TESBFC

TESTOSTERONE,  
BIO&TOT+SHBG,CHILD+FEMALE (Add Male  
Reference Ranges)

order code

flexilab code

Effective	Immediately			
Reference Ranges				
<i>Testosterone, LC-MS, Bioavailable</i>	F	1-6 yrs	LT 1.3	ng/dL
		7-9 yrs	0.3-5.0	
		10-11 yrs	0.4-9.6	
		12-13 yrs	1.7-18.8	
		14-15 yrs	3.0-22.6	
		16-17 yrs	3.3-28.6	
		18-30 yrs	2.2-20.6	
		31-40 yrs	4.1-25.5	
		41-51 yrs	2.8-16.5	
		Postmenopausal	1.5-9.4	
	Tanner Stage I	0.3-5.5		
	Tanner Stage II	1.2-15.0		
	Tanner Stage III	3.8-28.0		
	Tanner Stage IV	2.8-39.0		
	Tanner Stage V	2.5-23.0		
	M	1-6 yrs	LT 1.3	
		7-9 yrs	0.3-2.8	
		10-11 yrs	0.1-17.9	
		12-13 yrs	1.4-288.0	
		14-15 yrs	9.5-337.0	
16-17 yrs		35.0-509.0		
18 yrs +		130-680		
Tanner Stage I		0.3-13.0		
Tanner Stage II		0.3-59.0		
Tanner Stage III		1.9-296.0		
<i>Testosterone, Free</i>	F	1-6 yrs	LT 0.6	pg/mL
		7-9 yrs	0.6-1.8	
		10-11 yrs	0.1-3.5	
		12-13 yrs	0.9-6.8	
		14-15 yrs	1.2-7.5	
		16-17 yrs	1.2-9.9	
		18-30 yrs	0.8-7.4	
		31-40 yrs	1.3-9.2	
41-51 yrs	1.1-5.8			
Postmenopausal	0.6-3.8			

		<i>Tanner Stage I</i>	<i>LT 2.2</i>	<i>pg/mL</i>
		<i>Tanner Stage II</i>	<i>0.4-4.5</i>	
		<i>Tanner Stage III</i>	<i>1.3-7.5</i>	
		<i>Tanner Stage IV</i>	<i>1.1-15.5</i>	
		<i>Tanner Stage V</i>	<i>0.8-9.2</i>	
	<i>M</i>	<i>1-6 yrs</i>	<i>LT 0.6</i>	
		<i>7-9 yrs</i>	<i>0.1-0.9</i>	
		<i>10-11 yrs</i>	<i>0.1-6.3</i>	
		<i>12-13 yrs</i>	<i>0.5-98.0</i>	
		<i>14-15 yrs</i>	<i>3-138.0</i>	
		<i>16-17 yrs</i>	<i>38.0-173.0</i>	
		<i>18 yrs +</i>	<i>47-244</i>	
		<i>Tanner Stage I</i>	<i>3.7 or less</i>	
		<i>Tanner Stage II</i>	<i>0.3-21</i>	
		<i>Tanner Stage III</i>	<i>1.0-98.0</i>	
		<i>Tanner Stage IV</i>	<i>35.0-169.0</i>	
		<i>Tanner Stage V</i>	<i>41.0-239.0</i>	
<i>Testosterone, Total</i>	<i>F</i>	<i>Premature</i>		<i>ng/dL</i>
		<i>(26-28 weeks)</i>	<i>5-16</i>	
		<i>(31-35 weeks)</i>	<i>5-22</i>	
		<i>Newborn</i>	<i>20-64</i>	
			<i>1-7 months: Levels decrease during the first month to LT 10 ng/dL &amp; remain at this level until puberty.</i>	
		<i>7-9 yrs</i>	<i>LT 15</i>	
		<i>10-11 yrs</i>	<i>2-42</i>	
		<i>12-13 yrs</i>	<i>6-64</i>	
		<i>14-15 yrs</i>	<i>9-49</i>	
		<i>16-17 yrs</i>	<i>8-63</i>	
		<i>18-30 yrs</i>	<i>11-59</i>	
		<i>31-40 yrs</i>	<i>11-56</i>	
		<i>41-51 yrs</i>	<i>9-55</i>	
		<i>Postmenopausal</i>	<i>6-25</i>	
		<i>Tanner Stage I</i>	<i>LT 17</i>	<i>ng/dL</i>
		<i>Tanner Stage II</i>	<i>4-39</i>	
		<i>Tanner Stage III</i>	<i>10-60</i>	
		<i>Tanner Stage IV</i>	<i>8-63</i>	
		<i>Tanner Stage V</i>	<i>10-60</i>	
	<i>M</i>	<i>Premature26-28w</i>	<i>59-125</i>	
		<i>Premature32-35w</i>	<i>37-198</i>	
		<i>Newborn</i>	<i>75-400</i>	
		<i>1-7 mo</i>	<i>Levels decrease rapidly the first week to 20-50, and then increase to 60-400 between 20-60 days. Levels then decline to prepubertal range levels of 3-10 by seven months.</i>	
		<i>7-9 yrs</i>	<i>LT 9</i>	
		<i>10-11 yrs</i>	<i>2-57</i>	
		<i>12-13 yrs</i>	<i>7-747</i>	
		<i>14-15 yrs</i>	<i>33-585</i>	
		<i>16-17 yrs</i>	<i>185-886</i>	
		<i>18-39 yrs</i>	<i>400-1080</i>	
		<i>40-59 yrs</i>	<i>350-890</i>	
		<i>60 yrs +</i>	<i>350-720</i>	
		<i>Tanner Stage 1</i>	<i>LT 20</i>	
		<i>Tanner Stage II</i>	<i>2-149</i>	
		<i>Tanner Stage III</i>	<i>7-762</i>	

<i>Sex Hormone Binding Globulin</i>	<i>F</i>	<i>Tanner Stage IV</i>	<i>164-854</i>	<i>nmol/L</i>
		<i>Tanner Stage V</i>	<i>194-783</i>	
		<i>1-30 days</i>	<i>14-60</i>	
		<i>31-364 days</i>	<i>60-215</i>	
		<i>1-3 yrs</i>	<i>60-190</i>	
		<i>4-6 yrs</i>	<i>55-170</i>	
		<i>7-9 yrs</i>	<i>35-170</i>	
		<i>10-12 yrs</i>	<i>17-155</i>	
		<i>13-15 yrs</i>	<i>11-120</i>	
		<i>16-17 yrs</i>	<i>19-145</i>	
		<i>18 yrs+</i>	<i>30-135</i>	
		<i>Tanner Stage I</i>	<i>30-173</i>	
		<i>Tanner Stage II</i>	<i>16-127</i>	
		<i>Tanner Stage III</i>	<i>12-98</i>	
	<i>Tanner Stage IV</i>	<i>14-151</i>		
	<i>Tanner Stage V</i>	<i>23-165</i>		
	<i>M</i>	<i>1-30 days</i>	<i>13-85</i>	<i>nmol/L</i>
		<i>31-364 days</i>	<i>70-250</i>	
		<i>1-3 yrs</i>	<i>50-180</i>	
		<i>4-6 yrs</i>	<i>45-175</i>	
		<i>7-9 yrs</i>	<i>28-190</i>	
		<i>10-12 yrs</i>	<i>23-160</i>	
		<i>13-15 yrs</i>	<i>13-140</i>	
		<i>16-17 yrs</i>	<i>10-60</i>	
		<i>18 yrs +</i>	<i>11-80</i>	
		<i>Tanner Stage I</i>	<i>26-286</i>	
		<i>Tanner Stage II</i>	<i>22-169</i>	
		<i>Tanner Stage III</i>	<i>13-104</i>	
<i>Tanner Stage IV</i>		<i>11-60</i>		
<i>Tanner Stage V</i>		<i>11-71</i>		

## TSH3G

## TSH3G

## THYROID STIMULATING HORMONE 3RD GENERATION (New)

order code

flexilab code

Effective	11/17/2009			
Method	<i>Immunochemiluminometric Assay</i>			
CPT4	<i>84443</i>			
Specimen Requirements	<i>1 mL serum (SST tube). Allow serum to clot completely at room temperature. Separate serum from cells ASAP and put in separate plastic tube. Store and transport refrigerated.</i>			
Comments	<i>1) Min Amt: 0.5 mL. 2) Other acceptable specimens: Heparinized or EDTA plasma. 3) Unacceptable conditions: Grossly hemolyzed samples. 4) Stability: RT-2 days, Refrigerated-1 week, Frozen-1 month.</i>			
Reference Ranges	<i>TSH 3rd Generation</i>	<i>M</i>	<i>0-30 days</i> <i>1 mo-5 yrs</i> <i>5-18 yrs</i> <i>18 yrs+</i>	<i>0.520-16.000</i> <i>0.550-7.100</i> <i>0.370-6.000</i> <i>0.400-5.000</i>
		<i>F</i>	<i>0-30 days</i> <i>1 mo-5 yrs</i> <i>5-18 yrs</i> <i>18 yrs+</i>	<i>0.720-13.100</i> <i>0.460-8.100</i> <i>0.360-5.800</i> <i>0.400-5.000</i>
				<i>uIU/mL</i>

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TSHGAR

TSHGAR

THYROID STIMULATING HORMONE 3RD  
GENERATION (Delete)

order code

flexilab code

Effective	11/17/2009
Delete	<i>This test is being discontinued. Use the ordercode TSH3G to order this test.</i>

[PAML Web Test Directory](#)