

Reporting Title: CMMP, S
Performing Location: Rochester

Necessary Information:
Patient's age and sex are required.

Specimen Requirements:
Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Specimen Volume: 1 mL
Collection Instructions: Centrifuge and aliquot serum into plastic vial within 4 hours of collection.

- Forms:**
- 1. [Biochemical Genetics Patient Information](#) (T602)
 - 2. [If not ordering electronically, complete, print, and send a Biochemical Genetics Test Request](#) (T798) with the specimen.

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	28 days	
	Frozen	309 days	
	Ambient	28 days	

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
606118	Interpretation	Alphanumeric		59462-2
606112	Total Homocysteine	Numeric	nmol/mL	13965-9
606113	Methylmalonic acid	Numeric	nmol/mL	13964-2
606120	Cystathionine	Numeric	nmol/mL	26607-2
606114	2-Methylcitric acid	Numeric	nmol/mL	26904-3
606115	Methionine	Numeric	nmol/mL	20651-6
606116	Total Cysteine	Numeric	nmol/mL	20641-7
606117	Reviewed By	Alphanumeric		18771-6

LOINC® and CPT codes are provided by the performing laboratory.

Supplemental Report:
No

CPT Code Information:
83090

83918
82136
82542 (if appropriate for government payers)

Reference Values:

Age	Total homocysteine (nmol/mL)		Methylmalonic acid (nmol/mL)	2-Methylcitric acid (nmol/mL)	Total cysteine (nmol/mL)	Methionine (nmol/mL)	
	Female	Male				Female	Male
0-11 months	3.1-8.3	3.2-9.7	0.08-0.32	0.02-0.35	142.8-258.8	14.7-43.1	14.5-42.3
12-23 months	3.2-8.3	3.3-9.6	0.08-0.31	0.02-0.35	143.7-258.7	14.7-43.1	14.5-42.2
24-35 months	3.2-8.2	3.3-9.6	0.08-0.31	0.02-0.35	144.8-258.6	14.7-43.0	14.5-42.1
3 years	3.2-8.2	3.3-9.6	0.08-0.31	0.02-0.35	146.0-258.5	14.7-43.0	14.5-42.0
4 years	3.3-8.2	3.4-9.5	0.08-0.30	0.02-0.35	148.2-258.4	14.7-42.8	14.5-41.8
5 years	3.4-8.1	3.5-9.4	0.08-0.30	0.02-0.35	150.6-258.3	14.8-42.7	14.5-41.6
6 years	3.5-8.1	3.6-9.4	0.08-0.29	0.02-0.35	153.2-258.3	14.8-42.5	14.5-41.4
7 years	3.5-8.1	3.7-9.4	0.08-0.29	0.02-0.35	155.8-258.4	14.8-42.2	14.5-41.1
8 years	3.6-8.2	3.8-9.3	0.08-0.28	0.02-0.35	158.5-258.7	14.9-42.0	14.6-40.9
9 years	3.7-8.2	3.9-9.4	0.09-0.28	0.02-0.35	161.0-259.1	14.9-41.7	14.6-40.7
10 years	3.8-8.3	4.1-9.4	0.09-0.28	0.02-0.35	163.5-259.7	15.0-41.4	14.7-40.6
11 years	3.9-8.4	4.3-9.4	0.09-0.28	0.02-0.35	165.9-260.5	15.1-41.0	14.8-40.4
12 years	3.9-8.6	4.4-9.5	0.09-0.27	0.02-0.35	168.4-261.4	15.1-40.7	14.9-40.3
13 years	4.0-8.7	4.6-9.6	0.09-0.27	0.02-0.35	170.9-262.4	15.2-40.3	15.1-40.1
14 years	4.1-8.8	4.8-9.7	0.09-0.27	0.02-0.35	173.6-263.6	15.3-39.9	15.3-40.0
15 years	4.2-8.9	5.0-9.8	0.09-0.27	0.02-0.35	176.4-264.7	15.4-39.5	15.5-39.9
16 years	4.2-9.1	5.2-9.9	0.09-0.27	0.02-0.35	179.3-265.9	15.5-39.1	15.8-39.7
17 years	4.3-9.2	5.4-10.0	0.09-0.27	0.02-0.35	182.2-267.1	15.6-38.7	16.1-39.6
18 years	4.3-9.3	5.6-10.1	0.08-0.27	0.02-0.35	184.9-268.3	15.7-38.2	16.4-39.4
19 years	4.4-9.5	5.7-10.3	0.08-0.26	0.02-0.35	187.4-269.4	15.7-37.8	16.7-39.3
20 years	4.4-9.6	5.9-10.5	0.08-0.26	0.02-0.35	189.5-270.5	15.8-37.3	17.0-39.1
21 years	4.4-9.8	6.0-10.6	0.08-0.26	0.02-0.35	191.2-271.7	15.9-36.8	17.3-38.9
22 years	4.4-9.9	6.1-10.8	0.08-0.27	0.02-0.35	192.5-272.8	15.9-36.3	17.6-38.7
23 years	4.4-10.1	6.2-11.0	0.08-0.27	0.02-0.35	193.5-274.1	15.9-35.8	17.9-38.5
24 years	4.4-10.3	6.2-11.1	0.08-0.27	0.02-0.35	194.2-275.4	15.9-35.3	18.1-38.3
25 years	4.4-10.4	6.3-11.3	0.08-0.28	0.02-0.35	194.8-277.0	15.9-34.8	18.2-38.1
26 years	4.4-10.6	6.3-11.4	0.08-0.28	0.02-0.35	195.3-278.6	15.9-34.3	18.4-37.9
27 years	4.3-10.8	6.4-11.6	0.08-0.28	0.02-0.35	196.0-280.5	16.0-33.8	18.5-37.7
28 years	4.3-11.0	6.4-11.7	0.08-0.29	0.02-0.35	196.7-282.4	16.0-33.4	18.7-37.5
29 years	4.3-11.2	6.4-11.8	0.08-0.29	0.02-0.35	197.7-284.3	16.0-33.0	18.8-37.3
30 years	4.3-11.4	6.4-11.9	0.08-0.30	0.02-0.35	198.8-286.3	16.1- 32.6	18.9-37.1
31 years	4.4-11.6	6.4-12.1	0.08-0.30	0.02-0.35	200.2-288.2	16.1-32.2	19.0-36.9
32 years	4.4-11.8	6.4-12.2	0.08-0.31	0.02-0.35	201.7-290.0	16.1-31.8	19.1-36.7

Test Definition: CMMPS
Cobalamin, Methionine, and Methylmalonic
Acid Pathways, Serum

33 years	4.4-11.9	6.4-12.3	0.08-0.31	0.02-0.35	203.4-291.5	16.1-31.5	19.2-36.5
34 years	4.5-12.1	6.4-12.4	0.08-0.31	0.02-0.35	205.2-292.9	16.1-31.2	19.3-36.3
35 years	4.5-12.2	6.4-12.6	0.08-0.32	0.02-0.35	207.2-294.1	16.1-30.8	19.4-36.1
36 years	4.6-12.4	6.4-12.8	0.08-0.32	0.02-0.35	209.3-295.1	16.1-30.5	19.5-35.9
37 years	4.6-12.5	6.4-12.9	0.08-0.33	0.02-0.35	211.5-296.0	16.1-30.2	19.6-35.6
38 years	4.7-12.7	6.4-13.1	0.08-0.33	0.02-0.35	213.8-296.9	16.1-29.9	19.7-35.4
39 years	4.7-12.8	6.4-13.2	0.08-0.34	0.02-0.35	216.3-297.7	16.1-29.7	19.8-35.2
40 years	4.8-13.0	6.5-13.4	0.08-0.34	0.02-0.35	218.9-298.7	16.1-29.4	19.9-35.0
41 years	4.8-13.2	6.5-13.5	0.08-0.35	0.02-0.35	221.6-299.7	16.1-29.2	20.0-34.8
42 years	4.8-13.4	6.5-13.7	0.08-0.36	0.02-0.35	224.3-300.8	16.2-29.0	20.1-34.6
43 years	4.9-13.5	6.6-13.9	0.08-0.36	0.02-0.35	227.0-302.0	16.2-28.8	20.2-34.4
44 years	4.9-13.7	6.6-14.0	0.08-0.37	0.02-0.35	229.8-303.5	16.3-28.6	20.3-34.2
45 years	4.9-13.9	6.6-14.2	0.08-0.38	0.02-0.35	232.6-305.2	16.3-28.5	20.3-34.0
46 years	4.9-14.0	6.7-14.4	0.08-0.38	0.02-0.35	235.3-307.3	16.4-28.4	20.4-33.8
47 years	4.9-14.2	6.7-14.5	0.08-0.39	0.02-0.35	238.0-309.7	16.4-28.2	20.4-33.6
48 years	5.0-14.3	6.8-14.7	0.08-0.39	0.02-0.35	240.8-312.6	16.5-28.1	20.5-33.3
49 years	5.0-14.4	6.8-14.9	0.08-0.40	0.02-0.35	243.5-315.9	16.5-28.0	20.5-33.1
50 years	5.0-14.5	6.8-15.0	0.08-0.40	0.02-0.35	246.2-319.7	16.5-27.9	20.6-32.8
51 years	5.1-14.6	6.8-15.2	0.08-0.41	0.02-0.35	248.9-323.8	16.5-27.8	20.6-32.5
52 years	5.1-14.7	6.9-15.4	0.08-0.41	0.02-0.35	251.5-328.1	16.5-27.6	20.7-32.3
53 years	5.1-14.8	6.9-15.5	0.08-0.42	0.02-0.35	254.0-332.4	16.5-27.5	20.8-32.1
54 years	5.2-14.9	6.9-15.6	0.08-0.42	0.02-0.35	256.4-336.5	16.5-27.4	21.0-31.9
55 years	5.2-15.0	6.9-15.7	0.08-0.43	0.02-0.35	258.6-340.2	16.5-27.3	21.1-31.7
56 years	5.3-15.0	6.9-15.8	0.08-0.43	0.02-0.35	260.6-343.6	16.6-27.2	21.2-31.5
57 years	5.3-15.1	6.9-15.9	0.08-0.44	0.02-0.35	262.5-346.5	16.6-27.1	21.2-31.3
58 years	5.3-15.2	6.9-16.0	0.08-0.44	0.02-0.35	264.3-349.0	16.6-27.1	21.3-31.0
59 years	5.4-15.2	6.9-16.0	0.08-0.44	0.02-0.35	266.2-351.1	16.7-27.1	21.3-30.8
60 years	5.4-15.3	6.9-16.1	0.08-0.45	0.02-0.35	268.3-353.1	16.8-27.1	21.3-30.6
61 years	5.4-15.4	7.0-16.2	0.09-0.45	0.02-0.35	270.8-355.1	16.9-27.2	21.3-30.3
62 years	5.5-15.4	7.0-16.2	0.09-0.46	0.02-0.35	273.8-357.3	17.0-27.2	21.2-30.0
63 years	5.5-15.5	7.0-16.3	0.09-0.46	0.02-0.35	277.5-359.7	17.1-27.3	21.2-29.8
64 years	5.6-15.5	7.1-16.3	0.09-0.46	0.02-0.35	281.9-362.3	17.2-27.4	21.1-29.5
65 years	5.6-15.6	7.1-16.3	0.09-0.47	0.02-0.35	286.9-365.2	17.3-27.6	21.1-29.2
66 years	5.7-15.6	7.1-16.3	0.09-0.47	0.02-0.35	292.4-368.3	17.4-27.7	21.1-29.0
67 years	5.7-15.7	7.2-16.3	0.09-0.47	0.02-0.35	298.1-371.6	17.5-27.8	21.0-28.7
68 years	5.8-15.7	7.2-16.3	0.09-0.47	0.02-0.35	303.6-374.8	17.7-27.9	21.0-28.5
69 years	5.9-15.7	7.2-16.3	0.09-0.47	0.02-0.35	308.7-377.8	17.8-28.0	21.0-28.4
70 years	6.0-15.8	7.3-16.3	0.09-0.48	0.02-0.35	313.1-380.7	18.0-28.1	21.0-28.3
71 years	6.1-15.8	7.3-16.3	0.09-0.48	0.02-0.35	316.5-383.2	18.1-28.2	20.9-28.2
72 years	6.2-15.8	7.3-16.3	0.09-0.48	0.02-0.35	318.9-385.3	18.3-28.3	20.9-28.0
73 years	6.3-15.9	7.3-16.3	0.09-0.48	0.02-0.35	320.1-387.0	18.5-28.4	20.8-27.9
74 years	6.4-15.9	7.3-16.3	0.09-0.48	0.02-0.35	320.6-388.3	18.8-28.5	20.8-27.8
75 years	6.5-15.9	7.3-16.3	0.09-0.48	0.02-0.35	320.3-389.3	19.1-28.5	20.8-27.7

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76 years	6.6-15.9	7.3-16.3	0.09-0.48	0.02-0.35	319.6-389.9	19.3-28.6	20.8-27.5
77 years	6.7-16.0	7.4-16.3	0.10-0.48	0.02-0.35	319.1-390.2	19.6-28.6	20.9-27.4
78 years	6.8-16.0	7.4-16.3	0.10-0.48	0.02-0.35	318.5-390.5	20.0-28.7	20.9-27.2
79 years	6.9-16.0	7.5-16.3	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1
80 years	7.0-16.0	7.5-16.3	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1
81 years	7.1-16.0	7.7-16.2	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1
82 years	7.2-16.0	7.8-16.2	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1
83 years	7.2-16.0	7.9-16.2	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1
84 years	7.3-16.0	8.0-16.2	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1
85 years	7.3-16.0	8.2-16.2	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1
>85 years	7.4-16.0	8.3-16.2	0.10-0.48	0.02-0.35	317.9-390.6	20.3-28.7	21.0-27.1

An interpretive report will also be provided.