

MSMS Cutoffs

Analyte	Possible Disorders	current cutoffs	current %fp	Retained Cutoffs	Suggested cutoffs	Suggested % fp	CDC CUTOFFS
Arg.	Arginemia	≥120	0.04%		≥126 *	0.057	70
Arg/Orn.		≥1	0.03%		≥1		
Cit		≥70	0.03%		≥74 *	0.019	55
Cit/Arg		≥9	1.12%		≥12		
Leu	MSUD	≥350	0.11%		≥384 *	0.145	300
Val 0-168 hrs.		≥350	0.06%		≥400 *	0.062	
Val >168 hrs.		≥400	0.11%		≥400	0.024	
Leu/Ala		≥1.5	0.16%	1.5			
Leu/Phe		≥4.8	0.45%		≥5	0.185	
Met	HCY	≥80	0.19%	80			75
Met/Phe		≥1.1	0.16%		≥1	0.162	
Phe	PKU	≥160	0.04%	≥160			150
Phe/Tyr		≥2.5	0.14%	≥3			
Tyr	Tyr II, III	≥400	0.08%		≥470 *	0.078	400
Tyr/Phe		≥6	0.14%	≥6			
SUAC	Tyr I	≥2	0.004%		≥1.5 *	0.008	2
C0 High	CPT-1	≥130	0.02%	≥130			
C0(C16+C18)		≥90	0.08%		≥81	0.076	
C0 Low	CUD	≤7	0.10%	≤7			8.8
C3	PA, MMA, MCD	≥6.5	0.03%		≥7.1 *	0.048	6
C3/C2		≥0.2	0.13%		≥0.25	0.031	
C3DC_C4DC	MA, SCHAD	≥0.6	0.004%		≥0.45 *	0.015	0.45
C3DC_C4DC/C10		≥10	0.05%		≥8.58	0.071	
C4	SCAD, IBD, MADD	≥1.2	0.05%	≥1.2			1.3
C4/C2		≥0.05	0.13%		≥0.06	0.050	
C4/C3		≥0.7	0.20%		≥0.9	0.067	
C5	IVA, 2MBCD, MADD	≥0.65	0.10%		≥0.7 *	0.162	0.7
C5/C2		≥0.05	0.06%	≥0.05			
C5/C3		≥0.5	0.33%		≥0.75	0.105	
C5:1	BKT	≥0.19	0.01%		≥0.1 *	0.008	0.25
C5OH_C4DC	3-MCC, HMG, 3MGA	≥0.94	0.02%		≥0.8 *	0.008	0.9
C5DC_C6OH	GA-I	≥0.5	0.04%	≥0.5			0.35
C5DC_C6OH/C16		≥0.25	1.48%		≥0.45	0.126	
C5DC/C8		≥8	0.31%	8	≥.021		

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C8	MCADD	≥0.35	0.08%	≥0.35			0.45
C6		≥0.2	0.073%	≥0.2			0.45
C10		≥0.35	0.120%		≥0.39	0.092	0.45
C10:1		≥0.25	0.031%		≥0.22	0.082	0.3
C10:2		≥0.1	0.008%		≥0.06	0.038	0.15
C8/C10		≥3	0.383%		≥5	0.071	
C14:1	VLCAD	≥0.6	0.029%	≥0.6			0.6
C14		≥0.7	0.015%	≥0.7			
C14:1/C12:1		≥5	0.244%		≥8	0.050	
C14:2		≥0.11	0.027%		≥0.1	0.057	
C16	CACT, CPTII	≥9.5	0.008%		≥8 *	0.031	7.5
C18:1		≥3.7	0.072%	≥3.7			3.5
C18		≥2.3	0.236%		≥2.5	0.086	
C18:2		≥1.4	0.075%		≥1.5	0.069	
C16-OH	LCHAD	≥0.15	0.004%		≥0.06 *	0.042	0.15
C18:1-OH		≥0.08	0.006%		≥0.05	0.054	
C16:1-OH		≥0.2	0.000%		≥0.09	0.065	
C18-OH		≥0.1	0.000%		≥0.03	0.075	0.1

* Note: In reviewing the confirmed cases for amino acids and acylcarnitines disorders adjusting the cutoffs of 13 primary

2014 current cutoff vs 2015 new or retained cutoff data				
CAH-Cutoffs	current		retained	
weight	cutoff	current %fp	cutoff	new %fp
0-1249 gms	≥150	0.36%	150	0.41%
1250-2249 gms	≥90	0.16%	90	0.16%
>2250 gms	≥40	0.19%	40	0.23%

Based on 2015 cumulative data no cutoff adjustments are necessary

Biotinidase cutoffs	current		suggested	
	cutoff	current %fp	cutoff	new %fp
	<50	0.019%	<55 *	0.070%

* One confirmed biotinidase case had a value of 49.9 with a cutoff of 50

changing the cutoff from 50 to 55 based on the data would yield the same number of presumptive positive samples (37)

Galt cutoffs	current		retained	
	cutoff	current %fp	cutoff	new %fp
Normal	>3.5	0.24%	>3.5	0.21%
Borderline	3.1-3.5	0.08%	3.1-3.5	0.09%
Presumptive Positive	≤3.0	0.11%	≤3.0	0.09%

Immunoreactive Trypsinogen (IRT)	current		retained	
	cutoff	current %fp	cutoff	new %fp
	≥60	2.11%	≥60	2.30%

The lab has documentation of a confirmed case of CF with two mutations with an IRT value of 61.9 thus confirming the need to leave the cutoff at 60.

Thyroxine (T4)	Current cutoffs	current %fp	retained cutoff	new %fp
Age related cutoffs				
0 - 48 hours old	≤6	0.52%	≤6	0.58%
>48hours old	≤4	1.40%	≤4	1.80%

Thyroid Stimulating Hormone (TSH)	Current cutoff	current %fp	retained cutoff	new %fp
	≥25	0.74%	≥25	1.15%

There has been several confirmed cases of CH with TSH values slightly above the cutoff of 25 justifying keeping the cutoff at the current level

These recommendations are based on a review of the 2015 complete year data, the lab has not evaluated the 2016 data.