

Biochemistry Reference Interval Changes for Surrey

BSPS is scheduled to change over to a new Laboratory Information Management System on Monday 26th November.

This change will coincide with a change of reporting intervals for the below biochemistry tests following a structured policy review of the published national guidance, manufacturer-generated data and other available literature sources.

Reference intervals highlighted in grey are affected and are to be replaced by the relevant reference intervals highlighted in orange.

Note: The below changes only apply to samples processed at the three Surrey Blood Sciences laboratories (ASPH, FPH or RSCH) using the Siemens analytical platform.

Serum / Plasma Advia Chemistry Test Reference Intervals				
Test	Gender	Age	Range	Units
ALT / ALT (conc)			(< 50)	IU/L
			10 – 49	
Ammonia		<1m	(< 100)	umol/L
		<16y	(< 50)	
		Adult	(< 40)	
		Adult	11.2 – 35.4	
Amylase			(< 118)	U/L
			30 – 118	
Apolipoprotein A-1	M		(0.80 - 1.70)	g/L
	M		0.79 – 1.69	
	F		(0.76 - 2.14)	
AST	M	<30d	(< 51)	IU/L
	M	<1y	(< 65)	
	M	<3y	(< 56)	
	M	<6y	(< 48)	
	M	<9y	(< 42)	
	M	Adult	(< 40)	
	M	<8d	26 – 98	
	M	<1m	16 – 67	
	M	<4m	16 – 60	
	M	<7m	16 – 62	
	M	<1y	16 – 52	
	M	<4y	16 – 57	
	M	<7y	10 - 58	
	M	<10y	10 – 36	
	M	<16y	10 – 36	
	M	16– 60y	15 – 40	
	M	60 – 90y	19 – 48	
	M	>90y	11 – 38	
	F	<30d	(< 49)	
F	<1Yy	(< 79)		

Serum / Plasma Advia Chemistry Test Reference Intervals

Test	Gender	Age	Range	Units
	F	<3y	(< 69)	
	F	<6y	(< 59)	
	F	<9y	(< 41)	
	F	Adult	(< 40)	
	F	<8d	20 – 93	
	F	<1m	20 – 69	
	F	<4m	16 – 61	
	F	<7m	16 – 60	
	F	<1y	16 – 60	
	F	<4y	16 – 57	
	F	<7y	10 – 47	
	F	<10y	5 – 36	
	F	<16y	5 – 26	
	F	16– 60y	13 – 35	
	F	60 – 90y	9 – 36	
	F	>90y	18 – 30	
Bile acids			(< 10)	umol/L
			2 – 10	
Creatinine		<30d	(27 - 87)	umol/L
		<2y	(14 - 34)	
		<8y	(23 - 48)	
		<12y	(28 - 63)	
		<14y	(40 - 72)	
	M	Adult	(64 - 104)	
	F	Adult	(49 - 90)	
		<7d	29 – 90	umol/L
		<7m	22 – 73	
		<2y	11 – 34	
		<4y	15 – 30	
		<6y	21 – 34	
		<8y	26 – 40	
		<10y	31 – 46	
		<12y	35 – 53	
		<14y	38 – 59	
		<18y	41 – 65	
	M	Adult	64 – 104	
	F	Adult	49 - 90	
Creatinine clearance	M		(70 - 140)	mL/min
	F		(70 - 125)	
			>60	mL/min
gGT	M		(< 73)	IU/L
	F		(< 38)	
Globulin			(20 – 35)	g/L
			no range quoted	
Iron	M		(12 - 32)	umol/L
	M		12 - 31	

Serum / Plasma Advia Chemistry Test Reference Intervals				
Test	Gender	Age	Range	Units
	F		(9 - 30)	
LDH			(< 500)	U/L
			<480	
Total protein		<30d	(41 - 63)	g/L
		<6m	(44 - 67)	
		<1y	(55 - 79)	
		<18y	(57 - 80)	
	M	<2m	40 – 76	
	M	<6m	40 – 70	
	M	<1y	42 – 79	
	M	<7y	60 – 80	
	M	<10y	63 – 81	
	M	<20y	64 - 86	
	F	<2m	36 – 70	
	F	<6m	40 – 76	
	F	<1y	46 – 78	
	F	<7y	60 – 78	
	F	<10y	63 – 81	
	F	<20y	64 – 86	
		Adult	(60 - 80)	
Uric acid	M		(200 - 430)	umol/L
	F		(140 - 360)	
	pregnant	12 weeks	110 – 250	
		24 weeks	140 – 290	
		36 weeks	180 – 370	
	pregnant	12 weeks	119 – 250	
		24 weeks	143 – 291	
		36 weeks	184 – 374	

Urine Advia Chemistry Test Reference Intervals				
Test	Gender	Age	Range	Units
Protein			0.01 – 0.14	g/24h
			0.05 – 0.08	g/24h

ADVIA Centaur Test Reference Intervals				
Test	Gender	Age	Range	Units
Cortisol			9am: 140 – 690 Midnight: <140	nmol/L
			9am: 120 – 620	

ADVIA Centaur Test Reference Intervals				
Test	Gender	Age	Range	Units
			Midnight: <100	
Free T3		<2y	5.1 – 8.0	pmol/L
		2 – 12y	5.1 – 7.4	
		13 – 20y	4.7 – 7.2	
		Adult (> 20y)	3.5 – 6.5	
Free T4		<6d	11 – 40	pmol/L
		up to 1m	11 – 25	
		Adult (>1m)	9 – 24	
			10 – 20	
Oestradiol	M	<2y	no range quoted	pmol/L
	M	2-3y	<188.7	
	M	4-9y	<97.2	
	M	10-13y	<134.5	
	M	13-15y	<179.6	
	M	Adult	< 146	
	F	<2y	no range quoted	
		2-3y	<106.9	
		4-9y	<160.4	
	F	10-11y	<644.6	
	F	12-15y	59.1 – 874.6	
		F	Follicular: Mid-cycle: Luteal: Post-menopausal:	
	F	Follicular: Mid-cycle: Luteal: Post-menopausal:	72 - 529 235 - 1309 205 - 786 <118	
Tanner stage related ranges also quoted (not on reports, user is referred to user handbook website)				
		Male	Female	
		Tanner 1: <107.4	Tanner 1: <230.0	
		Tanner 2: <102.6	Tanner 2: <717.9	
		Tanner 3: <188.4	Tanner 3: 51.3 – 805.4	
		Tanner 4: <161.2	Tanner 4: 57.3 – 778.9	
		Tanner 5: <244.0	Tanner 5: 80.4 – 1091	
Progesterone	M		no range quoted	nmol/L
	F	12y	<5.54	
	F	13 – 15y	<39.44	
	F	Day 21: <20 20–30 >30	non-ovulatory equivocal consistent with ovulation	
	F	Day 21: <16 16–28 >28	non-ovulatory equivocal consistent with ovulation	
	Tanner stage related ranges also quoted (not on reports, user is referred to user handbook website)			

ADVIA Centaur Test Reference Intervals				
Test	Gender	Age	Range	Units
		Male	Female	
		no ranges quoted	Tanner 1: no range Tanner 2: <32.99 Tanner 3: <32.91 Tanner 4: <27.56 Tanner 5: <49.33	
Prolactin	M	<2y	no range quoted	mIU/L
	M	2-3y	76.3 – 606.3	
	M	4-9y	95.4 – 382.2	
	M	10-15y	67.8 – 284.9	
	M	Adult	45 – 375	
	F	<2y	no range quoted	
	F	2-3y	65.7 – 332.8	
	F	4-9y	66.6 – 334.1	
	F	10-12y	75.0 – 386.7	
	F	13-15y	89.9 – 489.7	
	F	Adult	59 - 620	
	F	premenopausal	59 – 619	
	F	postmenopausal	38 – 430	
		Tanner stage related ranges also quoted (not on reports, user is referred to user handbook website)		
		Male	Female	
		Tanner 1: 78.4 – 391.1	Tanner 1: 65.7 – 395.9	
		Tanner 2: 49.4 – 289.4	Tanner 2: 78.9 – 461.7	
		Tanner 3: 74.2 – 252.7	Tanner 3: 84.0 – 386.5	
		Tanner 4: 67.8 – 328.6	Tanner 4: 84.8 – 439.3	
		Tanner 5: 105.6 – 306.9	Tanner 5: 90.4 – 526.4	
TSH			0.35 - 5.0	mU/L
			0.35 – 5.5	
Valproate		Routine monitoring of valproate levels is not recommended due to poor correlation between plasma levels and effect. Levels are useful to check compliance, confirm overdose and investigate therapeutic failure. Values >100 mg/L are associated with risk of CNS toxicity, but many patients tolerate higher levels with no ill effect.		mg/L
		Routine monitoring of valproate levels is not recommended. Levels are useful to check compliance, confirm overdose and investigate therapeutic failure. Some studies have suggested a therapeutic range of 50 – 100, but there is a poor correlation between plasma levels and effect.		