

**Technically valid results on or outside these limits must be notified to the clinical team\* unless the previous result (within the last 7 days) was worse or identical. These limits apply at any time of the day or night.**

Notification may be direct or through Duty Biochemist's (DB) office (ext 30348) if 09:00-17:30 weekdays; On-call Clinical Biochem Specialist Registrar (SpR) (switchboard) if Out of hours (OOH). *If in doubt, call DB to discuss.*

	Lower limit ( ≤ )	Higher Limit ( ≥ )	Units	Notes
Sodium	125 (>16y) 130 (<16 y)	150	mmol/L	120 -155 if in-patient (IP)
Potassium	2.5	6.5	mmol/L	Not haemolysed <2.0 on known renal patients.
Urea	None	30 (adult) 10 (<16 y)	mmol/L	Only phone GP/OP & only if first time call out limit exceeded
Creatinine	None	354 adult 200 (<16 y)	µmol/L	
Bicarbonate	10	None	mmol/L	
Adj. Calcium	1.8	3.2	mmol/L	Adj only (consider Tot Ca if no Alb)
Magnesium	0.4	None	mmol/L	
Phosphate	0.3	None	mmol/L	
Glucose	2.5 (>28d) 1.9 (0-28d)	25.0 (adult) 15.0 (<18 y)	mmol/L	2.0 - 30.0 if known diabetic
Antenatal, GAN	as above	7.8	mmol/L	Refer to DB to email
Total bilirubin	None	300	µmol/L	Only if patient is under 1 year of age
Conj Bilirubin	None	25	µmol/L	< 6 weeks old only
Ammonia	None	100	µmol/L	Sample not haemolysed or >4h old
Triglycerides	None	20	mmol/L	Above 30 if IP/OP
ALT/AST	None	600 500 (<16 y)	IU/L	
CK	None	5000	IU/L	
Amylase	None	400	IU/L	
CRP	None	300	mg/L	Excluding hospital patients
Bile acids	None	100	µmol/L	Pregnant women only
TSH	None	50	mIU/L	
Free T4	5.4	40	pmol/L	(<5.4 Alinity, < 5.2 Architect)
Free T3		20	pmol/L	
Cortisol	100	None	nmol/L	< 50 phone (not if part of ONDST), 50–100 nmol/L refer to DB.
30 min cortisol	250			COR30 refer to DB
Oestradiol	None	15000	pmol/L	
Carbamazepine	None	25	mg/L	
Digoxin	None	2.0	µg/L	If taken 6h post dose. Upper limit 2.5 µg/L if K >3.0 mmol/L
Lithium	None	1.5	mmol/L	If 12h post dose. Check tube type.
Paracetamol	None	3	mg/L	Cut off will remain 100 mg/L for A&E
Phenobarbitone	None	70	mg/L	
Phenytoin	None	25	mg/L	
Salicylate	None	300	mg/L	
Theophylline	None	25	mg/L	
Urate		340		Pregnant women only; not renal
Ethanol		4000	mg/L	
Troponin		>15F, >34M	ng/L	GP only
AKI		2,3		
		1		Call only if K > 6.0 mmol/L

**\*Refer to "Clinical Biochemistry Procedure for Providing & Receiving Pathology Results/Reports by Telephone, Fax and E-mail" CHEM-MP-002-NWL for the communication protocols that must be followed for each site.**

Details of all calls involving the transmission of results MUST be recorded in CallBack or a telephone log

**Please state "this result is urgent" when telephoning results.**

## ACTION LIMITS (OOH) – CLINICAL BIOCHEMISTRY

**Technically valid results on or outside these limits must be notified to the clinical team\* unless the previous result (within the last 7 days) was worse or identical. These limits apply at any time of the day or night. Notification may be direct or through: On-call Clinical Biochem Specialist Registrar (SpR) (switchboard) if Out of hours (OOH). If in doubt, phone it or call SpR to discuss**

	Lower limit ( ≤ )	Higher Limit ( ≥ )	Units	Notes
Sodium	125 (>16y) 130 (<16y)	150	mmol/L	120 -155 if in-patient (IP)
Potassium	2.5	6.5	mmol/L	Not haemolysed <2.0 on known renal patients.
Urea	None	30 (adult 10 (<16 y)	mmol/L	Only phone GP/OP & only if first time call out limit exceeded
Creatinine	None	354 adult 200 (<16 y)	µmol/L	
Bicarbonate	10	None	mmol/L	
Adj. Calcium	1.8	3.2	mmol/L	Adj only (consider Tot Ca if no Alb)
Magnesium	0.4	None	mmol/L	
Phosphate	0.3	None	mmol/L	
Glucose	2.5 (>28d) 1.9 (0-28d)	25.0 (adult) 15.0 (<18 y)	mmol/L	2.0 - 30.0 if known diabetic
Antenatal, GAN	as above	7.8	mmol/L	†Refer to DB to email
Total bilirubin	None	300	µmol/L	Only if patient is under 1 year of age
Conj Bilirubin	None	25	µmol/L	< 6 weeks old only
Ammonia	None	100	µmol/L	Sample not haemolysed or >4h old
Triglycerides	None	20	mmol/L	Call if IP > 30 mmol/L † GP/OP Refer to DB/call in morning
ALT/AST	None	600 500 (<16 y)	IU/L	† GP/OP Refer to DB/call in morning
CK	None	5000	IU/L	† GP/OP Refer to DB/call in morning
Amylase	None	400	IU/L	
CRP	None	300	mg/L	Excluding hospital patients
Bile acids	None	100	µmol/L	Refer pregnant only next working day
TSH	None	50	mIU/L	† GP/OP Refer to DB/call in morning
Free T4	5.4	40	pmol/L	† GP/OP Refer to DB/call in morning <5.4 Alinity, <5.2 Architect
Free T3		20	pmol/L	† GP/OP Refer to DB/call in morning
Cortisol	100	None	nmol/L	† GP/OP Refer to DB/call in morning
30 min cortisol	250			† GP/OP Refer to DB/call in morning
Oestradiol	None	15000	pmol/L	
Carbamazepine	None	25	mg/L	
Digoxin	None	2.0	µg/L	If taken 6h post dose. Upper limit 2.5 µg/L if K >3.0 mmol/L
Lithium	None	1.5	mmol/L	If 12h post dose. Check tube type.
Paracetamol	None	3	mg/L	Cut off will remain 100 mg/L for A&E
Phenobarbitone	None	70	mg/L	
Phenytoin	None	25	mg/L	
Salicylate	None	300	mg/L	
Theophylline	None	25	mg/L	
Urate		340		Pregnant women only; not renal
Ethanol		4000	mg/L	
Troponin		>15F, >34M	ng/L	GP only
AKI		2,3		
		1		Call only if K >6.0mmol/L, †For GP call AKI1 next am

\*Refer to “Clinical Biochemistry Procedure for Providing & Receiving Pathology Results/Reports by Telephone, Fax and E-mail” CHEM-MP-002-NWL for the communication protocols that must be followed for each site.

†OOH-refer next day: These results do not need to be telephoned OOH but must be actioned the next day. Notify the day shift BMS at handover for HH, SMH, CW, THH, C&W & WM results. Give ChX results and any others specified above to Duty Biochemist (x30348). Weekend results call out on Saturday/Sunday morning.

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