

DATE:	16 October 2023
TO:	South Sector: Physicians, Nurses and Healthcare Providers, Laboratory Staff
FROM:	Clinical Biochemistry, South Sector, Alberta Precision Laboratories (APL)
RE:	Insulin-Like Growth Factor-1 (IGF-1) by Liquid Chromatography-Mass Spectrometry (LC-MS)

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Key Message

- Effective October 16, 2023, Insulin-Like Growth Factor-1 (IGF-1) will be measured by Liquid Chromatography-Mass Spectrometry (LC-MS) in the Analytical Toxicology department in Calgary.
- There will be new IGF-1 reference intervals due to the change in methodology (see Appendix).

Background

- IGF-1 is the downstream marker for Growth Hormone (GH) activity and is used to diagnose a patient with disorders related to GH overproduction (acromegaly, gigantism) or resistance/deficiency.
- Historically, IGF-1 was performed by immunoassay technologies, which are prone to a variety of sources of pre-analytical error that may cause erroneous results.
- LC-MS is considered the gold standard for measurement of IGF-1, and APL-Calgary will be the only site in Canada offering this test on this platform.

How this will impact you

- No change in specimen ordering or sample collection requirements.
- To accommodate the updated methodology, new reference intervals will be implemented that have improved alignment with the patients being tested.
- Testing will be batched and analyzed once per week.

Action Required

- No specific actions are required.

Questions or Concerns may be directed to

- Dr. Dennis Orton, Clinical Biochemist, APL-Calgary, 403-770-3219 | Dennis.Orton@aplabs.ca

Reviewed and Approved by

- Dr. Allison Venner, Associate Section Chief, Clinical Biochemistry, South Sector, APL
- Dr. Dylan Pillai, Medical Director, South Sector, APL



Appendix A:

Reference intervals programmed into connectcare.

Age in Year(s)	Male		Female		Gender U/X	
	Lower	Upper	Lower	Upper	Lower	Upper
0-1	18	156	14	192	14	192
1-2	14	203	23	243	14	243
2-3	16	222	28	256	16	256
3-4	22	229	31	249	22	249
4-5	30	236	33	237	30	237
5-6	39	250	36	234	36	250
6-7	47	275	39	246	39	275
7-8	54	312	44	279	44	312
8-9	61	356	51	334	51	356
9-10	67	405	61	408	61	408
10-11	73	456	73	495	73	495
11-12	79	506	88	585	79	585
12-13	84	551	104	665	84	665
13-14	90	589	120	719	90	719
14-15	95	618	136	729	95	729
15-16	99	633	147	691	99	691
16-17	104	633	153	611	104	633
17-18	107	615	149	509	107	615
18-22	91	442	85	370	85	442
23-25	66	346	73	320	66	346
26-30	60	329	66	303	60	329
31-35	54	310	59	279	54	310
36-40	48	292	54	258	48	292
41-45	44	275	49	240	44	275
46-50	40	259	44	227	40	259
51-55	37	245	40	217	37	245
56-60	34	232	37	208	34	232
61-65	33	220	35	201	33	220
66-70	32	209	34	194	32	209
71-75	32	200	34	187	32	200
76-80	33	192	34	182	33	192
81-85	33	185	34	177	33	185
86-90	33	179	33	175	33	179
> or=91	32	173	25	179	25	179



Appendix B:

Tanner stage reference intervals (appended as comment for pediatrics).

Tanner Stage	Male		Female		U/X	
	Lower range	Upper range	Lower range	Upper range	Lower range	Upper range
Stage I	81	255	86	323	81	323
Stage II	106	432	118	451	106	451
Stage III	245	511	258	529	245	529
Stage IV	223	578	224	586	223	586
Stage V	227	518	188	512	188	518

Effective September 1, 2023, APL has become the sole provider of all public lab services in Alberta. As a result, community lab services formally provided by DynaLIFE Medical Labs will become the responsibility of Alberta Precision Labs (APL). This change impacts all zones.