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## Appendix

Table of Glucose Values First 24 hours after Surgery and the Average Within 48 Hours

Metabolic Group	Peak Postoperative Glucose	Patients	Fasting		PACU		Pre-dinner		Bedtime		Morning		Average	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Normal	Expected Postoperative Glucose	240	90	7	99	16	106	17	112	16	107	14	102	14
	Mild Hyperglycemia	133	91	6	109	26	138	22	143	23	119	20	126	13
	Severe Hyperglycemia	69	92	5	121	38	164	43	176	36	130	32	148	23
	Total	442	91	7	106	25	133	36	144	35	118	23	116	23
Prediabetic	Expected Postoperative Glucose	196	106	9	105	15	112	17	122	17	115	15	109	13
	Mild Hyperglycemia	196	108	8	122	24	140	23	146	20	122	19	131	12
	Severe Hyperglycemia	134	111	8	126	29	176	43	188	45	135	32	151	17
	Total	526	108	8	117	24	146	39	157	40	125	25	128	22
Diabetic	Expected Postoperative Glucose	44	115	22	109	19	106	14	115	16	114	18	113	14
	Mild Hyperglycemia	84	126	24	126	25	140	21	143	21	130	19	134	13
	Severe Hyperglycemia	302	141	34	149	41	190	57	208	62	167	50	177	34
	Total	430	135	32	140	39	176	57	192	63	158	48	162	38
Grand Total		1398	111	26	120	33	154	49	167	53	135	39	135	34

## Insulin Management for Orthopedic Patients

- Order POC glucose:
  - NPO: order q6h
  - Eating: order AC and HS

\*Goal is random glucose <180 and AC glucose <140
- Determine patient sensitivity scales for diabetics:
  - Sensitive:** New diagnosis DM, age>70 years, BMI<25kg/m<sup>2</sup>, eGFR<45ml/min
  - Resistant:** Outpatient insulin >80 units/day, BMI>35 Kg/m<sup>2</sup>, steroid treatment >20mg q day
  - Usual:** all others
- Patient diabetes status prior to surgery:
  - Does not have diabetes/prediabetes:** SIH (Stress-Induced Hyperglycemia)
  - Patient with diabetes diagnosis and on oral meds at home or newly diagnosed diabetics**
  - Patients with DM on insulin at home**

4. Post-operative diabetes orders: (done based on patient status prior to surgery and the patient sensitivity scale determined above)

a. **Patient that does not have diabetes or patient with prediabetes:**

- i. Use only correctional insulin **SENSITIVE** scale

b. **Patient with diabetes diagnosis and on oral meds at home or newly diagnosed diabetics. \*Use sensitivity scale that was determined above:**

- i. Continue oral medications with the exception of sulfonylureas or SGLT2 inhibitors  
ii. Start correctional per patient sensitivity scale identified (usually the **USUAL** scale)

c. **Patient with existing diagnosis of Diabetes Mellitus treated with insulin at home. \*Use sensitivity scale that was determined above:**

- i. Determined **Sensitive** scale patient:

1. Insulin glargine 0.1 units/kg subcutaneous at bedtime  
OR  
Insulin glargine: order 50% of home TDD as basal at bedtime  
2. Insulin lispro 100 units/ml: Blood glucose (mg/dl) Sensitive scale

- ii. Determined **Usual** scale patient:

1. Insulin glargine 0.2 units/kg subcutaneous at bedtime  
OR  
Insulin glargine: order 50% of home TDD as basal at bedtime  
2. Insulin lispro 100 units/ml: Blood glucose (mg/dl) Usual scale

- iii. Determined **Resistant** scale patient:

1. Insulin glargine: order 50% of home TDD as basal at bedtime  
2. Insulin lispro 100 units/ml: Blood glucose (mg/dl) Resistant scale

5. **Insulin correctional scales:**

a. **SENSITIVE Scale correctional insulin:** Insulin lispro 100 units/ml

181-220 = 2 units  
221-260 = 3 units  
261 – 300 = 4 units  
301-350 = 5 units  
351-400 = 6 units  
>400 = 8 units

b. **USUAL scale correctional insulin:** insulin lispro 100 units/ml

141-180 = 2 units  
181-220 = 3 units  
221-260 = 4 units  
261 – 300 = 6 units  
301-350 = 8 units

351-400 = 10 units

>400 = 12 units

c. **RESISTANT scale correctional insulin:** insulin lispro 100 units/ml

141-180=3 units

181-220 =4 units

221-260 = 5 units

261 – 300=8 units

301-350=10 units

351-400 = 12 units

>400 = 14 units

6. Post-operative Adjustments:

a. Discontinue POC orders and insulin orders when blood glucose values are less than 140 WITHOUT insulin for 24 hours

b. Adjust insulin orders daily when blood glucose values are not within targeted levels:

i. **Basal Regimen: Insulin Adjustment**

1. **IF fasting and pre-dinner BG** is between 100-140 mg/dl without hypoglycemia the previous day: no change

2. **IF BG** is between 140 -180 mg/dl without hypoglycemia the previous day: increase glargine TDD by 10%

3. **IF BG** >180 mg/dl without hypoglycemia the previous day: increase glargine TDD by 20%

4. **IF BG** is between 70 -99 mg/dl: decrease glargine TDD by 10%

5. **IF BG** is <70 mg/dl: decrease glargine TDD by 20%