

Metabolism Medication Table

Class	Action	Side Effects	Medication Examples	Nursing Considerations
2nd Generation Sulfonylurea's O 15-30m P 1-2h D 24h <i>mimics cont. insulin</i>	Directly stim β cells to secrete insulin, \uparrow tissue response to insulin, \downarrow glucose prod. by liver.	Nervousness, tremors, Confusion, aplastic anemia, leukopenia, thrombocytopenia	glipizide (Glucotrol) glyburide nonmicronized (DiaBeta, Micronase) glyburide micronized (Glynase) glimepiride (Amaryl)	Causes hypoglycemia
Biguanides O unk. P 1-3h D unk	\downarrow hepatic prod. of glucose from stored glycogen, \downarrow absorption of glucose in sm. intest. \uparrow insulin recep. sensitivity	Dizziness, fatigue, headache, agitation, bitter or metallic taste, anorexia, N, V, D	metformin (Glucophage)	Hold 48h before/after IV contrast dye \rightarrow acute renal failure.
Alpha-Glucosidase Inhibitors	\downarrow absorpt. of CHO by inhibiting dig enzyme in sm int. resp. for release of glucose from CHO. (inhibits α glucosidase)	Flatulence, D hypoglycemia	acarbose (Precose) miglitol (Glyset)	use when do not achieve $\&$ results from diet alone. \rightarrow May cause hypogly. if taken \bar{c} insulin or sulfonylurea.
Thiazolidinediones (Insulin Enhancing Agents)	\downarrow insulin resistance $\&$ improve BG control.	greater risk MI $\&$ death H ₂ O retention \rightarrow edema potential liver failure	pioglitazone HCl (Actos) rosiglitazone maleate (Avandia)	\rightarrow May be combined \bar{c} sulfonylurea or insulin \rightarrow May be combined \bar{c} metformin
Meglitinides	stimulate β cells to release insulin.	weight gain hypoglycemia	repaglinide (Prandin) nateglinide (Starlix)	Short-acting ^{mon. for renal $\&$ liver} Not for liver dyst. (\downarrow liver metabolism rate) may cause hypogly.
Incretin Mimetics <i>hypoglycemia \bar{c} sulfonylurea</i>	Enhance insulin secretion, \uparrow β cell responsiveness, suppress glucagon secretion, slow gastric emptying $\&$ reduce food intake.	headache, dizziness, jitteriness, N, V, D	exenatide (Byetta)	Not a subst. for insulin Not for Type 1 DM, diabetic ketoacidosis, severe renal dyst, severe GI disease.

Incretin Modifiers?

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INSULIN TYPE	DRUG NAME	ONSET	PEAK	DURATION	ROUTE	NURSING CONSIDERATIONS
Rapid Acting	insulin lispro (Humalog)	<u>5-15 min.</u>	<u>30m-1h</u> <u>30-90m</u>	<u>2-4h</u> <u>2-5h</u>	<u>subQ</u>	Must not be admin > 5 min before mealtime Usually req. intermed. insulin too.
	insulin aspart (NovoLog)		1-3 hr.	3-5h		
	insulin glulisine (Apidra)		30-90m	1-2.5h		
Short Acting	insulin regular (Humulin R, Novolin R, regular insulin)	<u>30 min.</u>	<u>2-4h</u> ²⁻³	<u>6-8h</u>	<u>subQ</u> <u>IU</u> (regular only)	Given 30 min. before meals.
Intermediate Acting	insulin isophane NPH (Humulin N, Novolin N)	<u>1-2 h</u>	<u>6-12h</u>	<u>18-24h</u>	<u>subQ</u>	Looks cloudy - gently rotated to mix (contains protein derivative to prolong).
	insulin zinc suspension Lente (Humulin L, Novolin L)		8-12h	18-24h		
Long Acting: Basal (Levemir) <u>de tremir</u>	ultralente insulin	<u>5-8 h</u>	14-20h	30-36 h	<u>subQ</u>	Given 1x day @ bedtime. Cannot be mixed w any other insulin.
	insulin glargine (Lantus)	1h	<u>None</u>	<u>24h</u>		
Combination Insulins (Premixed)	Humulin 70/30	0.5h	4-8h	22-24h	<u>subQ</u>	
	insulin isophane NPH 50/50	0.5h	4-8h	24h		
	Humalog 75/25	5-15 min	0.5-6h	20-24h		