

1. GLP-1 receptor agonists are most commonly prescribed for the treatment of:
 - A. Type 1 diabetes
 - B. Type 2 diabetes and obesity
 - C. Hypertension
 - D. Hyperlipidemia

2. The incretin effect describes the body's ability to:
 - A. Release insulin only during fasting
 - B. Produce more insulin after oral glucose than IV glucose
 - C. Reduce insulin secretion after eating
 - D. Increase glucagon secretion after meals

3. GLP-1 is naturally released from which part of the gastrointestinal tract?
 - A. Stomach G-cells
 - B. Upper small intestine K-cells
 - C. Lower small intestine L-cells
 - D. Colon epithelial cells

4. Endogenous GLP-1 has a very short half-life primarily because it is broken down by:
 - A. DPP-4 enzyme
 - B. CYP450 enzymes
 - C. The liver
 - D. Renal filtration

5. Which discovery helped lead to the development of the first GLP-1 medication?
 - A. Gila monster saliva
 - B. Bacterial insulin analogs
 - C. Synthetic glucagon
 - D. Snake venom peptides

6. GLP-1 receptor agonists increase insulin release in a manner that is:
 - A. Continuous
 - B. Glucose-dependent
 - C. Independent of blood sugar levels
 - D. Limited to fasting states

7. One way GLP-1 agonists help control blood glucose is by:
 - A. Increasing glucagon secretion
 - B. Increasing hepatic glucose production
 - C. Slowing DPP-4 enzyme action
 - D. Slowing gastric emptying

8. GLP-1 receptors have been identified in which ocular structures?
- A. Corneal endothelium
 - B. Extraocular muscles
 - C. Lens epithelium
 - D. Retinal ganglion cells
9. Some patients may experience temporary worsening of diabetic retinopathy (rebound retinopathy) shortly after starting GLP-1 therapy due to:
- A. Medication toxicity
 - B. Increased intraocular pressure
 - C. Rapid improvement in blood glucose control
 - D. Retinal ischemia
10. What is the recommended eye care approach when a patient begins GLP-1 therapy?
- A. No additional monitoring needed
 - B. Baseline exam and closer follow-up during the first year
 - C. Annual exams only
 - D. Immediate retinal laser treatment
11. Which GLP-1 medication is taken orally rather than by injection?
- A. Ozempic (semaglutide)
 - B. Victoza (liraglutide)
 - C. Trulicity (dulaglutide)
 - D. Rybelsus (semaglutide)
12. Compared with liraglutide, semaglutide generally results in:
- A. Less weight loss
 - B. More frequent dosing
 - C. Greater weight loss
 - D. Worsening cardiovascular health
13. Nausea and vomiting associated with GLP-1 therapy are related to receptors located in the:
- A. Area postrema
 - B. Cerebellum
 - C. Superior colliculus
 - D. Visual cortex
14. When used alone, GLP-1 receptor agonists have what level of hypoglycemia risk?
- A. Low
 - B. Moderate
 - C. High
 - D. Severe

15. Which mechanism may explain the potential neuroprotective effects of GLP-1 therapy in the eye?
- A. Increased oxidative stress
 - B. Pro-inflammatory signaling
 - C. Anti-apoptotic and anti-inflammatory effects
 - D. Elevated intraocular pressure
16. Research suggests GLP-1 agonists may benefit glaucoma primarily by:
- A. Increasing aqueous outflow
 - B. Lowering intraocular pressure directly
 - C. Improving corneal thickness
 - D. Protecting retinal ganglion cells
17. Tirzepatide is unique because it acts on:
- A. GLP-1 receptors only
 - B. Insulin receptors
 - C. Both GLP-1 and GIP receptors
 - D. Glucagon receptors
18. A safety concern associated with GLP-1 therapy in animal studies involves risk of:
- A. Retinal detachment
 - B. Medullary thyroid carcinoma
 - C. Angle closure
 - D. Macular edema
19. Current evidence regarding GLP-1 therapy and nonarteritic ischemic optic neuropathy (NAION) suggests:
- A. A proven causal relationship
 - B. No association in any study
 - C. Mixed results with no definitive conclusion
 - D. Complete protection against NAION
20. Which patient education point is MOST important for optometrists to emphasize when patients start GLP-1 therapy?
- A. Avoid dilated eye exams
 - B. Stop all eye medications
 - C. Expect permanent vision changes
 - D. Report any sudden vision changes promptly