

# Competency Exam Study Guide

## ESRD & Dialysis

1. Purpose of dialysis in end-stage renal disease (ESRD)
2. Types of dialysis: hemodialysis and peritoneal dialysis
3. Dialysis process: diffusion, and ultrafiltration
4. What is the principle of diffusion in dialysis?
5. How does osmosis function in the context of dialysis treatment?
6. Explain the concept of ultrafiltration in dialysis.
7. What factors influence the effectiveness of dialysis treatment?
8. Describe the role of dialysate in dialysis.
9. How do different types of membranes affect dialysis efficiency?
10. What is the significance of blood flow rate in hemodialysis?
11. How does temperature influence dialysis treatment?
12. What are the primary types of dialysis modalities?
13. Describe the hemodialysis process: advantages and disadvantages.
14. Describe the peritoneal dialysis: process, advantages/disadvantages
15. Considerations for choosing the appropriate dialysis modality for individual patients
16. How does transplantation of a new kidney impact people with ESRD?
17. How does hemodialysis differ from peritoneal dialysis?
18. What factors influence the choice of dialysis modality for a patient?
19. What are the advantages of peritoneal dialysis over hemodialysis?
20. Role of the renal dietitian in ESRD care? Role of the MSW in ESRD? Role of Nurse? Role of DT?

## Access

21. What are the primary types of vascular access for hemodialysis?
22. Arteriovenous fistula (AVF): definition, advantages, and considerations for placement
23. Arteriovenous graft (AVG): definition, advantages, and considerations for placement
24. Central venous catheter (CVC): indications for use, advantages and disadvantages
25. What is the rule of 6?
26. Complications associated with different dialysis access options: CVC, AVF, AVG
27. What are the pros and cons of using a fistula versus a graft for hemodialysis?
28. How is a central venous catheter used in hemodialysis?
29. What are the risks associated with central venous catheters?
30. Describe the process of creating a fistula for hemodialysis.
31. What are common complications associated with hemodialysis access?
32. What are the risks and complications associated with peritoneal dialysis access?
33. How often should dialysis access be monitored?

## Lab Tests & Medications

34. How is the adequacy of dialysis measured?
35. What is the Kt/V and URR, and why are they important?

36. Causes of anemia in ESRD patients
37. Importance of managing anemia in dialysis patients
38. What is the definition of anemia in the context of dialysis?
39. What are the common causes of anemia in patients on dialysis?
40. How is anemia diagnosed in dialysis patients?
41. What role does erythropoietin play in managing anemia?
42. What are the common treatments for anemia in dialysis patients?
43. Why is iron important for patients with anemia?
44. What are the complications of untreated anemia in dialysis patients?
45. How does anemia affect the quality of life in dialysis patients?
46. Complications of uncontrolled bone mineral metabolism in ESRD patients
47. What role does the kidney play in bone mineral metabolism?
48. What are the key minerals involved in bone health?
49. How do phosphate binders work?
50. What dietary restrictions should dialysis patients follow concerning phosphorus?
51. What are the consequences of untreated mineral and bone disorders in dialysis patients?
52. What is the relationship between bone health and cardiovascular disease in dialysis patients?
53. Describe the methods used to monitor bone mineral metabolism in dialysis patients.
54. Dietary restrictions in ESRD and the importance: sodium, potassium, phosphorus
55. Nutritional goals for ESRD patients on dialysis
56. What are some dietary restrictions for patients on dialysis?
57. Why is protein intake important for dialysis patients?
58. How does sodium restriction benefit dialysis patients?
59. What is the role of potassium in the diet of dialysis patients?
60. How can phosphorus levels be managed through diet?
61. What are some examples of renal-friendly foods?
62. What is the significance of fluid intake regulation in dialysis patients?
63. Phosphate binders: types, mechanisms of action, and considerations for use
64. Intravenous iron therapy: indications, dosing, and monitoring
65. Anticoagulants: heparin and citrate use in dialysis treatment
66. How do phosphate binders work, and when are they prescribed?
67. What are erythropoiesis-stimulating agents (ESAs), and how are they used?
68. Explain the role of vitamin D analogs in managing bone health in dialysis patients.
69. What anticoagulants are commonly used during hemodialysis, and why?
70. What is the significance of managing blood pressure in dialysis patients?
71. List common medications that require dose adjustments in patients with ESRD.
72. How do you educate patients about their medications post-dialysis?
73. What are the risks associated with polypharmacy in dialysis patients?

## Environmental & Water

74. What is the frequency of chlorine and chloramine monitoring?
75. What are the risks associated with chlorine and chloramine breakthroughs in dialysis?
76. Why is water quality important in dialysis?
77. What are common contaminants found in dialysis water?
78. What are ultrafiltration and reverse osmosis in the context of dialysis water?
79. How often should water quality be tested in a dialysis facility?
80. What are the potential complications of poor-quality water in dialysis?

81. How can patients be educated about the importance of water quality?
82. What role does the brine tank play in the water treatment process?
83. What is the purpose of the UV light and endotoxin filter in the water treatment system?

## Symptoms/Complications

84. Intradialytic hypotension: causes, symptoms, and management
85. Dialysis disequilibrium syndrome: risk factors, symptoms, and prevention
86. Vascular access complications: stenosis, thrombosis, and infection
87. What are common complications associated with hemodialysis?
88. What is dialysis disequilibrium syndrome?
89. How can hypotension during dialysis be managed?
90. What are the signs and symptoms of an infection related to dialysis access?
91. What is peritonitis, and how is it treated?
92. What are the long-term complications of peritoneal dialysis?
93. How can patients minimize the risk of complications during dialysis?
94. What is the role of patient education in preventing dialysis complications?

## Extra Questions for consideration or discussion

95. How does patient education influence dialysis outcomes?
96. Describe the impact of kidney transplantation on dialysis patients.
97. How do socioeconomic factors influence access to dialysis?
98. What are the ethical considerations in dialysis treatment?
99. How can healthcare teams improve collaboration for dialysis patient care?
100. What are the most important takeaways for patients starting dialysis therapy?