



**Urmia University of Medical Sciences**  
**School of Medicine**  
**Department of Nephrology**

**Course Name:** Cuffed Catheter insertion for Hemodialysis

**Level of Learner:** Fellows of nephrology acquainted with uncuffed hemodialysis catheter insertion

**Duration of the training course:** 6 days

**Instructors:** Khadijeh Makhdoomi, Saeed Abkhiz, Javad Zeinali, Azam Mivefroshan, Lale Jafari  
(Nephrologist of Urmia University of Medical Sciences)  
Afshin Mohammadi (Fellowship of interventional radiology)

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**Course Working Time:** 9:00AM - 14:00 PM

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**Introduction:**

In the chronic setting of renal failure, venous catheters are utilized as a long term vascular access for patients in whom an AV access cannot be readily created. Such patients include small children, some diabetic patients with severe vascular disease, patients who are morbidly obese, and patients who have undergone multiple AV access insertions and in whom additional sites for AV access insertion are not available. Additional indications include patients with cardiomyopathy unable to sustain adequate blood pressure or access flows.

Use of an uncuffed catheter for periods of time beyond several weeks results in a relatively high rate of infection and is not recommended. Dacron or felt cuffs bounded to the catheter reduce the incidences of line-related infection and of catheter migration and must be used whenever a long term use of the catheter is anticipated, or when it is anticipated that a patients will be discharged from the hospital with a catheter remaining in place.

Venous catheter insertion is a necessary skill for nephrology fellows to acquire, but many programs may not have resources to provide the required level of training and provision of such intensive training has resulted in improved catheter-related outcomes.

**Prerequisite:**

- 1- Familiarity with anatomy of head and neck vascularization
- 2- Work experiences in temporary or uncuffed catheter insertion
- 3- Familiarity with complications of central venous catheterization
- 4- See the film of cuffed catheter insertion

**Course structure:**

- 1- Lecture regarding anatomy of venous neck : 30 min
- 2- Lecture regarding complication of venous catheterization : 30 min
- 3- Present the venous catheterization film : 1 hour
- 4- Explanation the devices in cuffed catheter set : 30 min
- 5- Lecture about catheter insertion under ultrasonography guide : 1 hour

- 6- Sonography practice for venous finding in the neck: 1 hour
- 7- Pretest regard sterilization methods/ Prophylactic antibiotic therapy / Anticoagulation: 30 min
- 8- **Try to do** at least 3 uncuffed catheter insertion via internal jugular vein approach in 1-2 days
- 9-**Look** at least 2 cuffed tunneled catheter insertion in days 1-2
- 10- **Try** to cuffed tunneled catheter insertion at least 5 cases during the days 3-6

**Course requirements:** Patients and devices for catheterization will be provided by organizer

**Student learning outcomes:**

- Know the technique of cuffed catheter insertion with and without sonography guide
- Learn and probably see any complications of cuffed catheter insertion
- Procured the ability for management a patients with access failure
- Authenticity to cuffed catheter insertion alone

**Course Plan:**

Day	9:00-9:30 AM	9:30-10:00 AM	10:00-12:00 AM	12:00-14:00PM
1	Opening ceremony, Introducing colleagues		Look at uncuffed catheter insertion	
2	Anatomy of venous neck	complication of venous catheterization	Try to do uncuffed catheter insertion	
3	Present the venous catheterization film		Look cuffed tunneled catheter insertion	
4	Explanation the devices in cuffed catheter set	Pretest: sterilization antibiotic therapy Anticoagulation	Try to cuffed tunneled catheter insertion	
5	Lecture about catheter insertion under ultrasonography guide		Try to cuffed tunneled catheter insertion	
6	Sonography practice for venous finding in the neck		Try to cuffed tunneled catheter insertion	

**Text and Course material:**

Handbook of Dialysis ; 5th Edition : John T. Daugirdas, Peter Blake, Todd S. Ing ; 2015