	urination **Cystometrography:** Graphic comparison of bladder pressure as a function of volume **Voiding pressure study:** Comparison of detrusor contraction pressure, sphincter electromyelogram, and urinary flow	voiding dysfunction complicated by urinary infection, urinary retention, or neurogenic bladder dysfunction	experience fullness, coolness from the fluid, and urine leakage during the study Insertion of needles may be required for sphincter EMG (institution specific, often use electrode patches)

CT, Computed tomography; *DMSA,* dimercaptosuccinic acid; *DTPA,* diethylenetriamine pentaacetic acid; *EMG,* electromyography; *IV,* intravenous; *KUB,* kidney, ureters, and bladder; *MAG3,* mercaptoacetyltriglycine; *MRI,* magnetic resonance imaging; *NPO,* nothing by mouth; *PUV,* posterior urethral valve; *UTI,* urinary tract infection; *VCUG,* voiding cystourethrogram.

Laboratory Tests

Both urine and blood studies contribute vital information for detection of renal problems. The single most important test is probably routine urinalysis. Specific urine and blood tests provide additional information. Because nurses are usually the persons who collect the specimens for examination and who often perform many of the screening tests, they should be familiar with the test, its function, and factors that can alter or distort the results of the test. The major urine and blood tests are outlined in Tables 26-2 and 26-3.

TABLE 26-2
Urine Tests of Renal Function

Test	Normal Range	Deviations	Significance of Deviations
Physical Tests			
Volume	Age related Newborn: 30 to 60 ml Children: Bladder capacity (oz) = Age (years) + 2	Polyuria Oliguria	Osmotic factors (urinary glucose level in diabetes mellitus) Retention caused by obstructive disease Inadequate bladder emptying caused by neurogenic bladder or obstructive disorder
		Anuria	Obstruction of urinary tract; AKI
Specific	With normal fluid	High	Dehydration