An Herbalist’s View of the
Kidneys and Urinary System
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Anatomy and Physiology

Kidney
- Arteriole; afferent and efferent
- Hilus
- Renal capsule
- Renal artery
- Renal vein

Nephron
- Ascending tubule
- Bowman’s capsule
- Collecting duct
- Distal convoluted tubule
- Glomerulus
- Juxtaglomerular apparatus
- Juxtaglomerular cells
- Loop of Henle
- Peritubular capillary
- Proximal convoluted tubule
- Renal corpuscle
- Renal cortex

- Renal medulla
- Renal tubule

Ureter
Urethra
Urinary bladder
- Detrusor muscle
- Stretch receptors
- Trigone

Other terms
- Urine/Micturition
- Glomerular filtration rate (GFR)
- Filtration/Filtrate
- Urine/Micturition
- Glomerular filtration rate (GFR)
- Filtration/Filtrate
- Reabsorption
- Secretion
- Excretion
- Filtration

Functions of the Kidney:
1) Maintenance of water, electrolyte and acid-base balance
2) Excretion of water, nitrogenous waste products, some bacterial toxins, H+ (Hydrogen ions), electrolytes, fixed acids and metabolites, heat, carbon dioxide, drugs and various toxins
3) Regulation of blood pressure by secreting renin
4) Metabolic functions  a) gluconeogenesis  b) erythropoietin secretion c) synthesis of the active form of Vitamin D

Hormones, Secretions and Excretions:

<table>
<thead>
<tr>
<th>Aldosterone</th>
<th>Creatinine</th>
<th>Sodium (Na+)</th>
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<tr>
<td>Anti-diuretic</td>
<td>Erythropoietin</td>
<td>Urea</td>
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<tr>
<td>hormone (ADH)</td>
<td>Hydrogen (H+)</td>
<td>Urine</td>
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<tr>
<td>Blood plasma</td>
<td>Potassium (P+)</td>
<td>Vitamin D</td>
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<tr>
<td>Chloride (Cl-)</td>
<td>Renin</td>
<td>Water (H₂O)</td>
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Disharmonies

- **Chronic renal failure (CRF)** - A reduction of nephrons (and GFR) leading to serious illness. It has many causes especially diabetes and glomerulonephritis. Diet, Tonics

- **Cystitis** - Inflammation of the bladder usually due to bacterial infection. Analgesics, Anodynes, Antimicrobials, Diet (drink water), Diuretics, Hypnotics,

- **Diabetes** - A complex disease resulting from insulin irregularities and the metabolism of carbohydrates, fats and proteins. Diet, Oplopanax, Panax, Tonics, Trigonella, Vaccinium,

- **Dysuria** - Painful urination. Anodyne, Antimicrobials, Antiinflammatories, Demulcents, Diuretics, Sitz bath

- **Eczema** - A confusing term referring to a number of skin disorders usually red, itchy and scaly. Anodyne, Compress, Diet, Nervines, Tonics

- **Edema** - Swelling due to excess fluid in the tissue. Cardio-tonics, Diuretics, Tonics

- **End-stage renal failure** - A complete or near complete failure of the kidneys. It generally follows chronic renal failure. Dialysis, Transplantation

- **Enuresis** - Involuntary discharge of urine at night. Also called bed-wetting. Astringent, Diet, Diuretic, Tonic, Verbascum root

- **Glomerulonephritis** - An inflammation of the glomeruli. Can be acute or progressive. May be immune mediated. Alteratives, Anodyne, Antimicrobials, Diet, Immunomodulators, Sedatives, Tonics

- **Glycosuria** - An abnormal quantity of sugar in the urine, most often due to diabetes. Diet, Tonics

- **Gout** - A condition in which uric acid is deposited in joints in the form of urate crystals causing intense pain. Anodyne, Antiinflammatories, Diet, Diuretics, Sedatives, Tonic

- **Hematuria** - Abnormal presence of blood in the urine. Astringents, Tonics, Diet

- **Incontinence** - Inability to control urination. Tonics, Astringents

- **Polycystic kidney disease** - A genetic disorder multiple cysts grow and spread on the kidneys. Over time they cause end-stage renal failure.

- **Polyuria** - Excretion of abnormally large amounts of urine. Diet

- **Prostatitis** - Inflammation of the prostate usually due to infection. Anodyne, Antiinflammatories, Antimicrobials, Demulcents, Diet, Diuretic, Immunostimulant, Tonic

- **Pyelitis** - Inflammation of the pelvis of the kidney- Anodyne, Antiinflammatory, Antimicrobial, Demulcents, Diet, Immunostimulant, Sedatives, Tonic

- **Pyelonephritis** - Pyelonephritis is an infection of the kidney and the ducts. Anodyne, Antiinflammatory, Antimicrobial, Demulcents, Diet, Immunostimulant, Sedatives, Tonic

- **Renal calculi/stones** - When urine becomes too concentrated and substances in the urine crystalize to form stones. Stones cause intense pain as they move down the ureters. Anodyne, Antilithic, Antispasmodic, Bath, Compress, Demulcent, Diet, Diuretic, Sedative, Tonic

- **Retention** - Inability to urinate, may be caused by many factors. Diet, Diuretic, Tonic

- **Stricture** - A narrowing of the lumen. May be caused by inflammation, pressure or scarring.

- **Urethritis** - Inflammation of the urethra, often caused by infection. Dysuria is a common symptom. Anodyne, Antiinflammatory, Antimicrobial, Demulcent, Diet, Diuretic, Immunostimulant, Tonic
Urinary tract infection (UTI) - Infection of any of the structures of the urinary tract. Anodyne, Antiinflammatory, Antimicrobial, Demulcent, Diet, Diuretic, Immunostimulant, Sedative, Sitz bath, Tonic

Herbs
Agrimony – Agrimonia spp.
Aspen – Populus spp.
Astragalus/Huang chi – Astragalus membranaceous
Black haw – Viburnum prunifolium
Buchu – Barosma spp.
Bugleweed – Lycopus spp.
Burdock – Arctium spp.
Bush clover – Lespedeza capitata
California poppy – Eschscholtzia spp.
Canadian fleabane – Erigeron canadensis
Cattail – Typha spp.
Cedar – Thuja spp.
Celery seed – Apium graveolens
Chickweed – Stellaria media
Cleavers/Bedstraw – Galium aparine/G. spp.
Corn silk – Zea mays
Crampbark – Viburnum opulus/V. trilobum
Cranberry – Vaccinium spp.
Cubeb berry – Piper cubeba
Dandelion – Taraxacum officinale
Dooryard knotweed – Polygonum aviculare
Echinacea – Echinacea spp.
Goldenrod – Solidago spp.
Golden seal – Hydrastis canadensis
Gravelroot – Eupatorium maculatum
Horsetail – Equisetum spp.
Irish moss – Chondrus crispus
Juniper – Juniperus spp.
Kava kava – Piper methysticum

Liatris – Liatris spp.
Licorice – Glycyrrhiza uralensis/G. glabra
Mallow – Malva spp.
Marshmallow – Althaea officinalis
Mullein root – Verbascum thapsus
Nettles – Urtica spp.
Oatstraw – Avena sativa/A. fatua
Parsley – Petroselimum spp.
Plantain – Plantago spp.
Poke – Phytolacca spp.
Prickly ash – Zanthoxylum spp.
Quack grass – Agropyron repens
Rattlesnake master – Eryngium spp.
Rhatany – Krameria spp.
St. Johnswort – Hypericum perforatum
Saw palmetto – Serenoa repens
Shepherd's purse – Capsella bursa-pastoris
Silk tassel – Garrya spp.
Skullcap – Scutellaria spp.
Stoneroot – Collinsonia canadensis
Sweet sumac – Rhus aromatica
Uva-ursi – Arctostaphylos uva-ursi
Valerian – Valeriana officinalis/V. spp.
Wild hydrangea – Hydrangea arborescens
Wild yam – Dioscorea villosa/D. quadranata
Yarrow – Achillea millefolium
Yellow jasmine – Gelsemium sempervirens
Yellow pond lily – Nuphar polysepala
Yerba santa – Eriodictyon spp.
Categories of Therapeutics

Anodyne- reduce pain
Antibacterial- kill or inhibit bacteria
Antiinflammatories- reduce inflammation
Antilithic- reduce or suppress urinary calculi (stones) and act to dissolve those already present.
Antimicrobial- kill or suppress a variety of microbes
Antispasmodics- reduce smooth muscle cramps
Astringent- tighten tissue
Compress- a cloth immersed in a medicinal tea and applied on the body
Demulcents- mucilaginous substance used internally or externally to soothe mucous membranes
Diet- the intake of food and drink
Diuretic- increases urinary output
Immunostimulant- increase immunity
Nervines- tonify nerves
Sedatives- calm and allay excitement
Sitz bath- a bath of medicinal tea in which one sits in
Tonic- a simple or remedy taken over time for general or a specific health issue