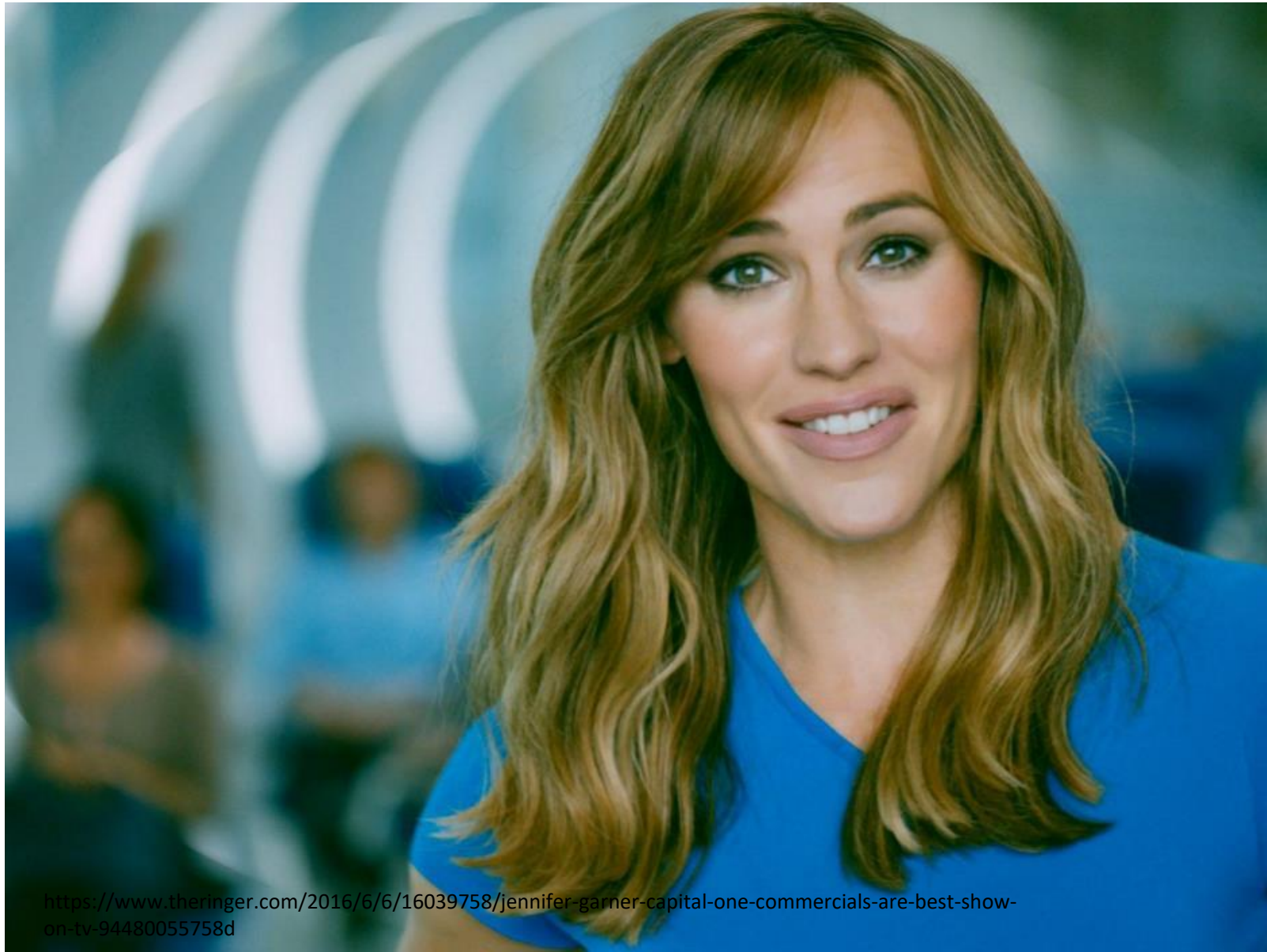
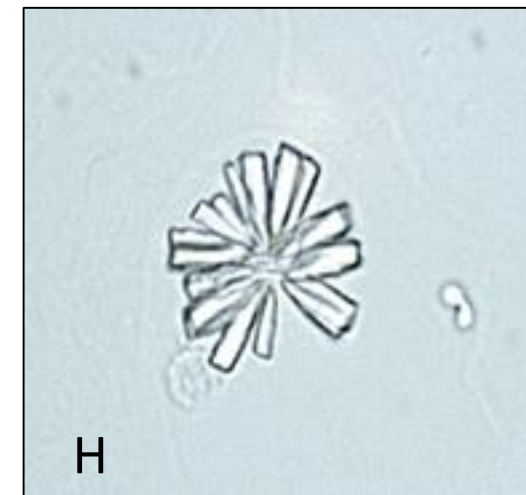
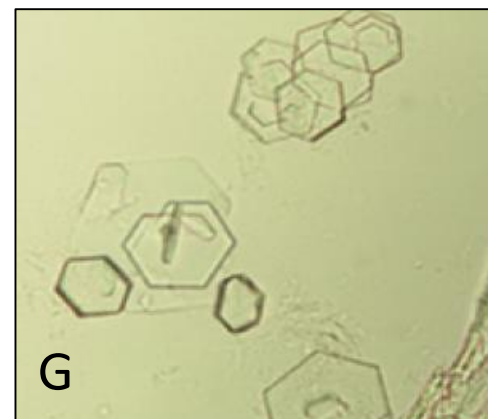
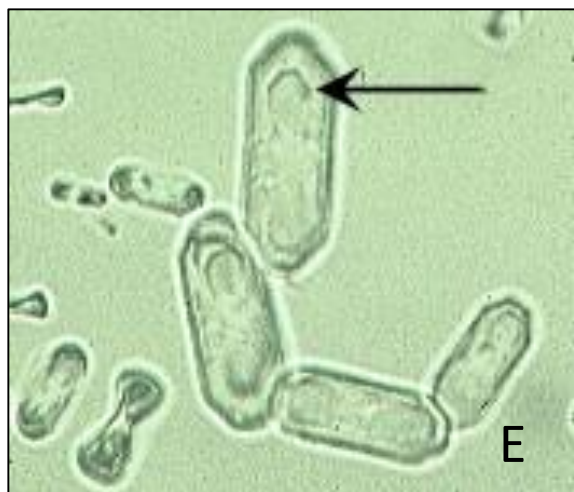
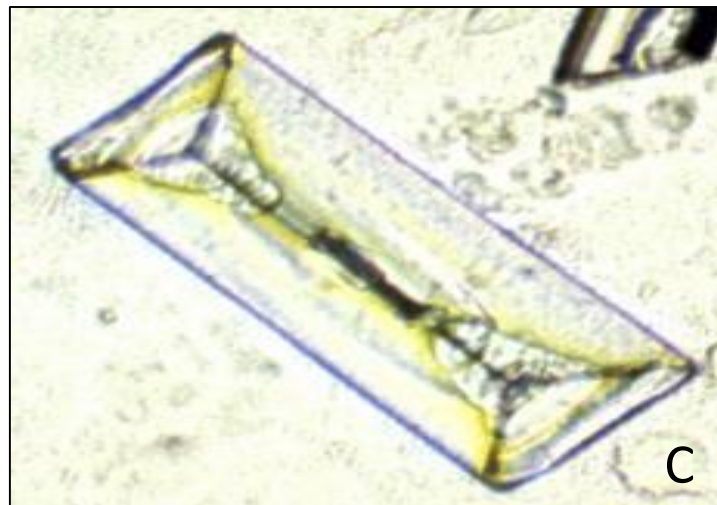
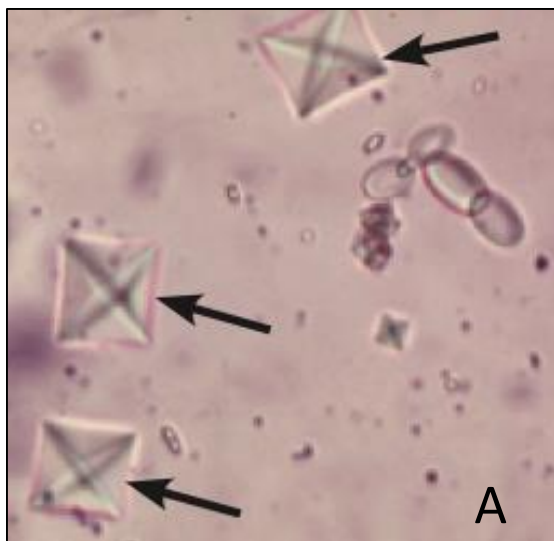
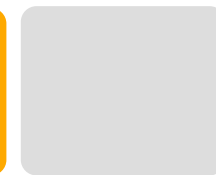


Application Exercise. *What's in Your Urine?*

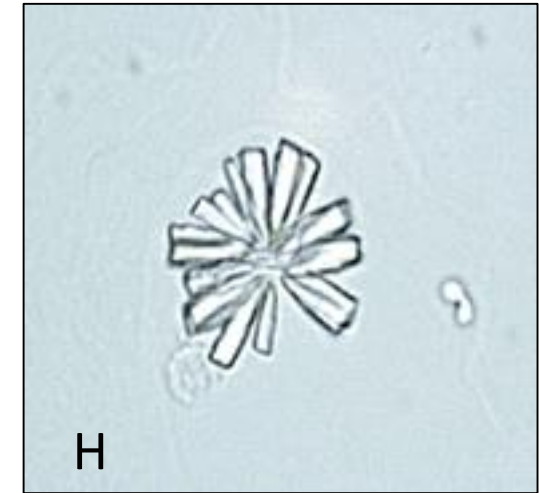
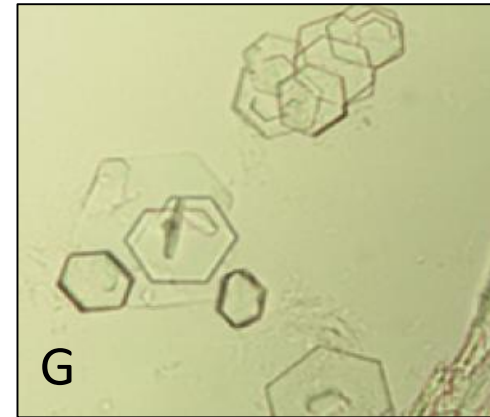
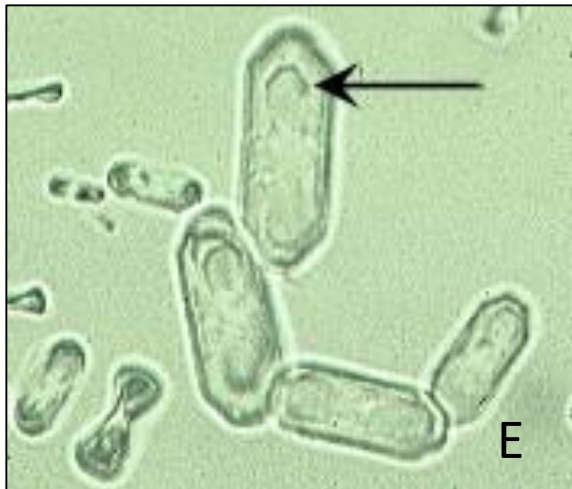
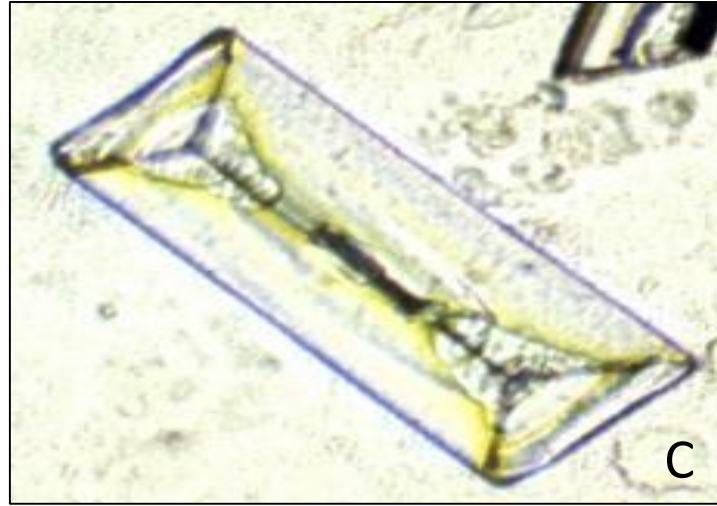
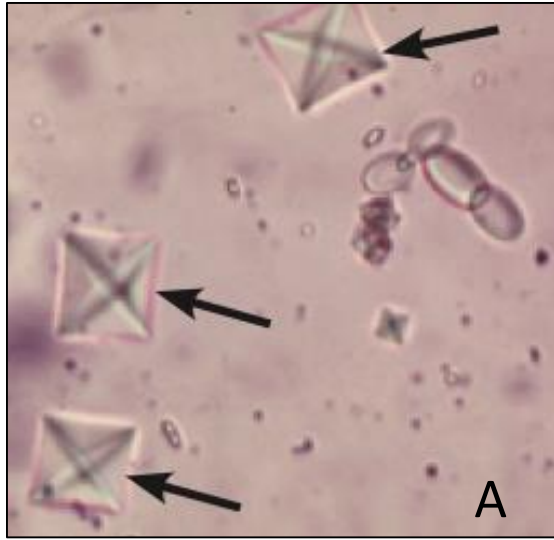


<https://www.theringer.com/2016/6/6/16039758/jennifer-garner-capital-one-commercials-are-best-show-on-tv-94480055758d>

Application Exercise. What's in your urine?



Application Exercise. What's in your urine?



A. calcium oxalate crystals (dihydrate form); B. hyaline cast; C. triple phosphate/struvite/magnesium ammonium phosphate crystal; D. RBC cast; E. calcium oxalate crystals (monohydrate form; arrow indicates one with a picket-fence shape); F. WBC cast; G. cystine crystals; H. calcium phosphate crystal

Case 1: A 65-year-old man presents with vomiting, polyuria, polydipsia, edema, and ascites.

Chemistry

BUN	133	H	mg/dl
Creatinine	4.1	H	mg/dl
Total protein	3.3	L	g/dl
Albumin	0.7	L	g/dl
A/G ratio	0.28	L	
ALP	43		U/L
ALT	21		U/L
Glucose	12		mg/dl
Sodium	151		mmol/L
Potassium	5.1		mmol/L
Chloride	124		mmol/L
Total CO₂	17		mmol/L
Anion gap	15.1		mmol/L
Calcium	8.4	L	mg/dl
Phosphorus	6.9	H	mg/dl
Cholesterol	530	H	mg/dl

Urinalysis

Urine source	voided
Color	yellow
Turbidity	cloudy
Sp Gr	1.016
pH	7.0
Protein	4+
Glucose	negative
Ketone	negative
Bilirubin	negative
Blood	negative
Sediment	1-2 RBC/hpf
	2-5 WBC/hpf
	granular casts
	amorphous crystals

Interpret the serum chemistry.
Interpret the UA.

Case 1: A 65-year-old man presents with vomiting, polyuria, polydipsia, edema, and ascites.

Chemistry

*This is a case of nephrotic syndrome for which you will learn about in detail in Block 6 Renal, but you are welcome to read about it here: <https://www.ncbi.nlm.nih.gov/books/NBK470444/>

azotemia	BUN	133	H	mg/dl		
	Creatinine	4.1	H	mg/dl		
hypoproteinemia	Total protein	3.3	L	g/dl	Urine source	voided
hypoalbuminemia	Albumin	0.7	L	g/dl	Color	yellow
low A/G ratio	A/G ratio	0.28	L		Turbidity	cloudy
could indicate	ALP	43		U/L	Sp Gr	1.016
low albumin	ALT	21		U/L	pH	7.0
and/or high	Glucose	12		mg/dl	Protein	4+ proteinuria
globulins	Sodium	151		mmol/L	Glucose	negative
	Potassium	5.1		mmol/L	Ketone	negative
	Chloride	124		mmol/L	Bilirubin	negative
	Total CO₂	17		mmol/L	Blood	negative
	Anion gap	15.1		mmol/L	Sediment	1-2 RBC/hpf
hypocalcemia	Calcium	8.4	L	mg/dl		2-5 WBC/hpf
hyperphosphatemia	Phosphorus	6.9	H	mg/dl		granular casts
	Cholesterol	530	H	mg/dl		amorphous crystals

granular casts are a sign of many types of kidney diseases

Low calcium is attributed to hypoalbuminemia.

Healthy kidneys can remove extra phosphorus in your blood. But when you have chronic kidney disease (CKD), your kidneys can't remove phosphorus very well.

You do not need to know about cholesterol at this time.