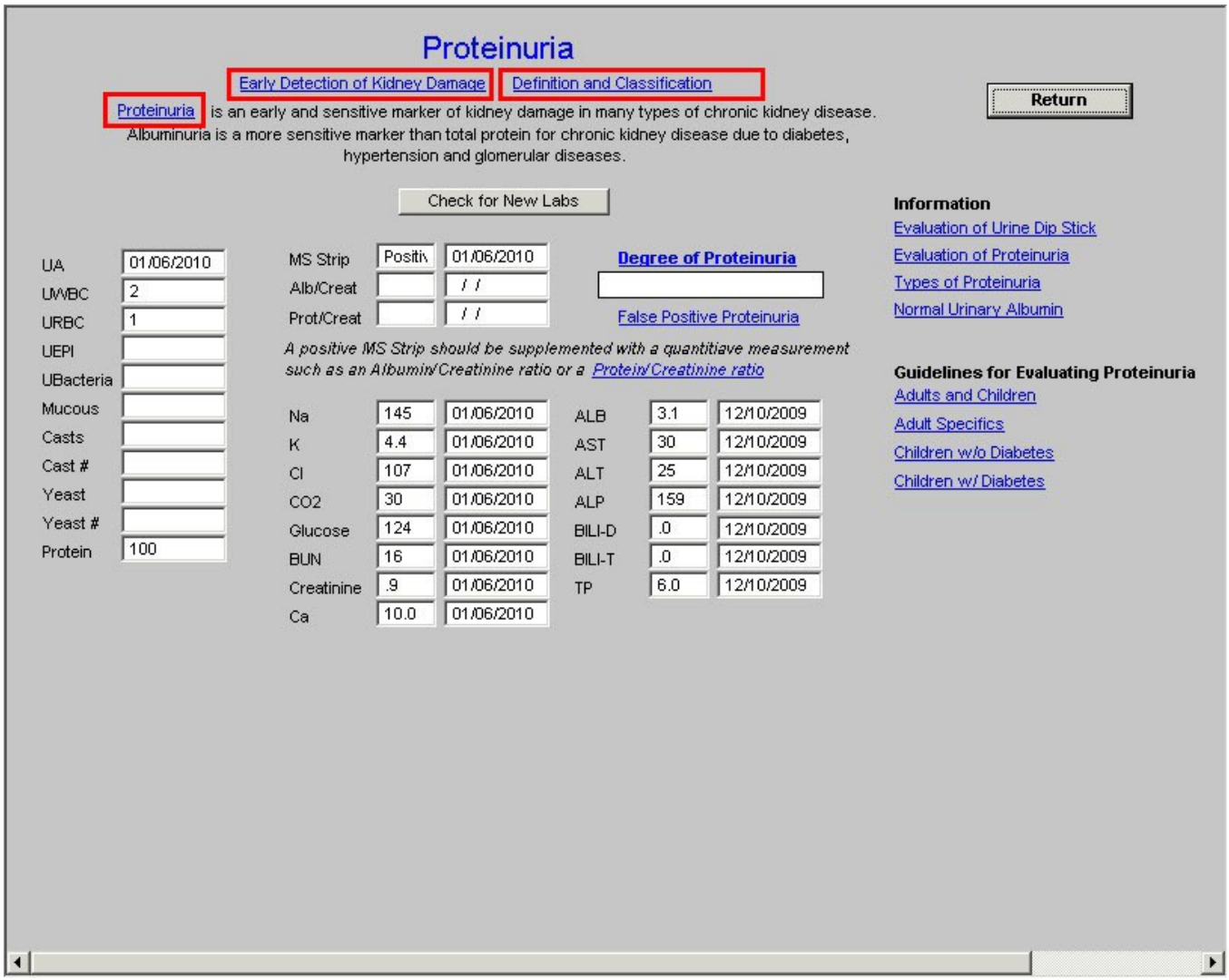
Proteinuria Tutorial



At the top of the **Proteinuria** template are two buttons which give information about the **early detection of kidney damage** and **definitions of proteinuria and albuminuria**.

The first button is entitled "**Early Detection of Kidney Damage**." When it is launched the following is displayed.

Early Detection of Kidney Damage

- Early detection: Persistently increased urinary excretion of protein is a sensitive marker of kidney damage. Early detection allows more timely introduction of therapy to slow disease progression.
- Albuminuria is more sensitive marker for adults with CKD due to diabetes, hypertension, and glomerular diseases than total protein.

- NKF recommends random spot urine measurements due to the inconvenience and errors associated with timed- urine samples.
- First morning specimens are preferred: if not available, random specimens are acceptable
- If 1+ protein, assess total protein-to-creatinine ratio or albumin-to-creatinine ratio within 3 months.

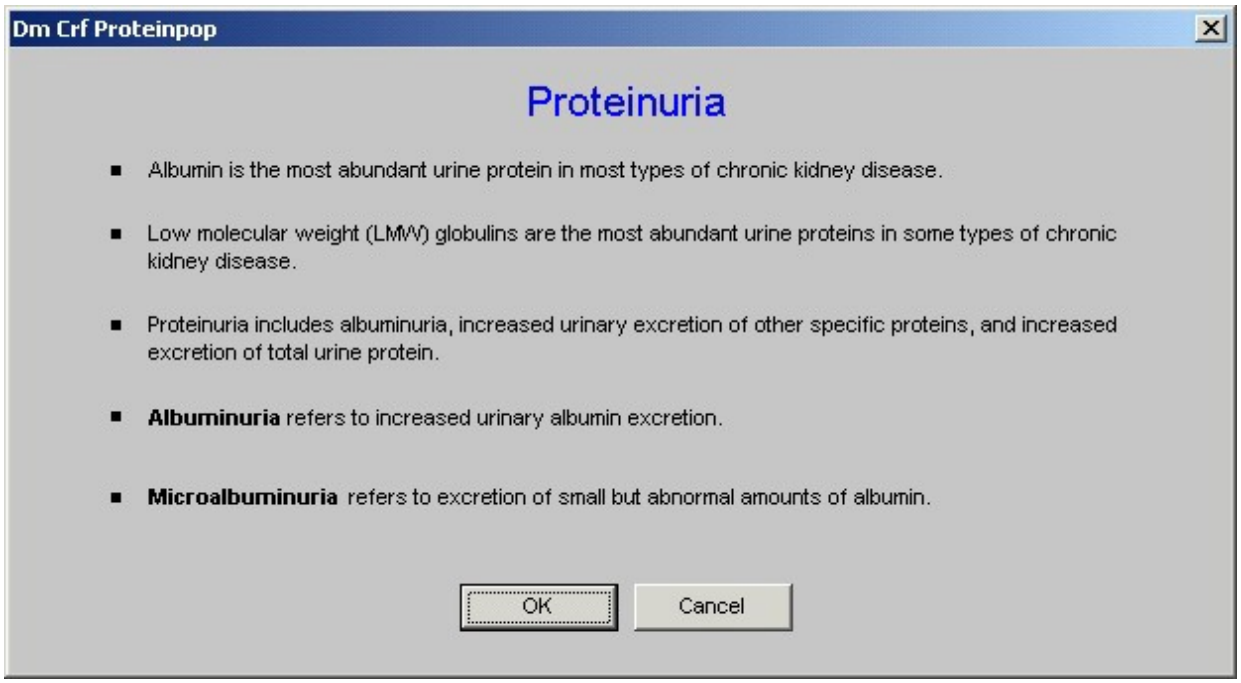
The second button is entitled "**Definitions of Proteinuria and albuminuria**." When this button is activated, the following information appears.

Definitions of Proteinuria and Albuminuria

	Urine Collection Method	Normal	Microalbuminuria	Albuminuria or Clinical Proteinuria
Total Protein	24-Hour Excretion (varies with method)	<300 mg/day	NA	>300 mg/day
	Spot Urine Dipstick	<30 mg/dL	NA	>30 mg/dL
	Spot Urine Protein-to-Creatinine Ratio (varies with method)	<200 mg/g	NA	>200 mg/g
Albumin	24-Hour Excretion	<30 mg/day	30–300 mg/day	>300 mg/day
	Spot Urine Albumin-Specific Dipstick	<3 mg/dL	>3 mg/dL	NA
	Spot Urine Albumin-to-Creatinine Ratio (varies by gender[a])	<17 mg/g (men) <25 mg/g (women)	17–250 mg/g (men) 25–355 mg/g (women)	>250 mg/g (men) >355 mg/g (women)

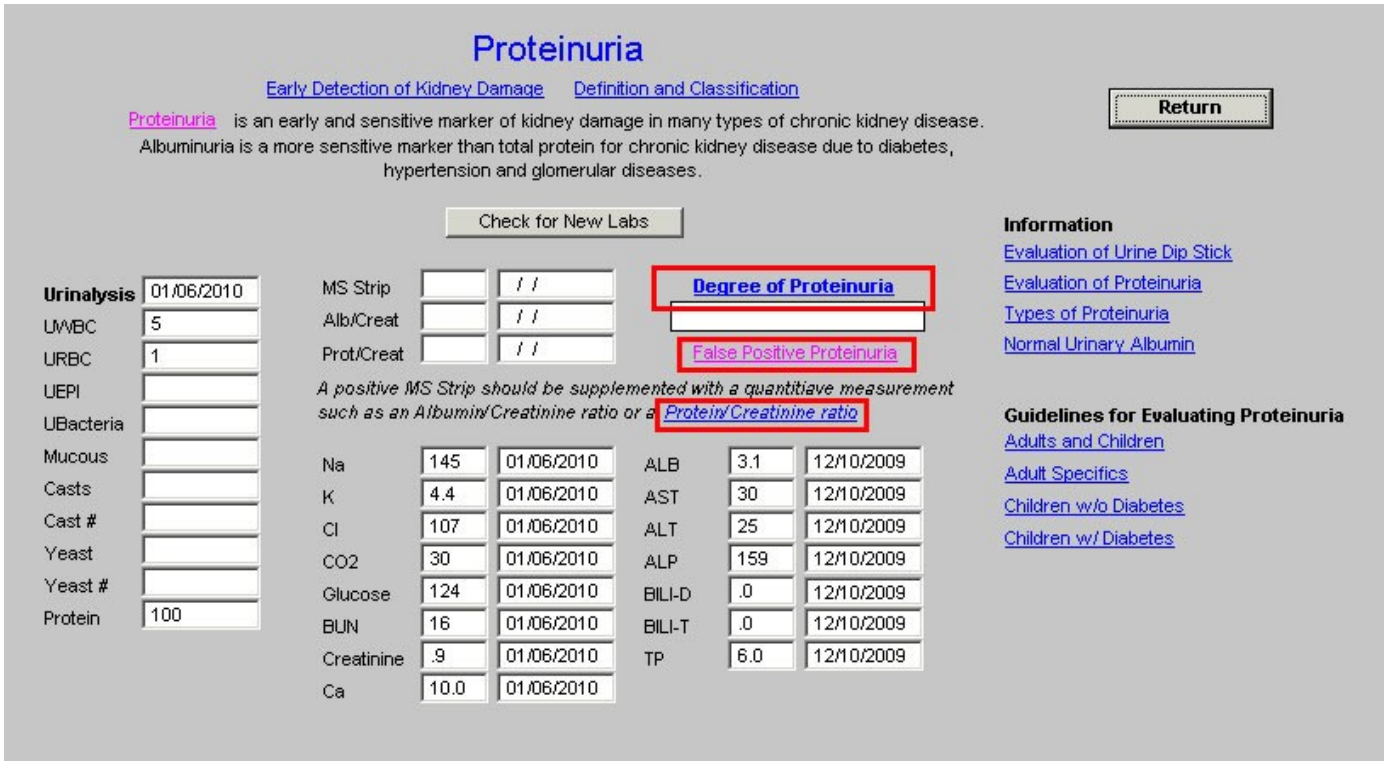
[a] Gender-specific cut-off values are from a single study.[19] Use of the same cut-off value for men and women leads to higher values of prevalence for women than men. Current recommendations from the American Diabetes Association define cut-off values for spot urine albumin-to-creatinine ratio for microalbuminuria and albuminuria as 30 and 300 mg/g, respectively, without regard to gender.[8]

The next hyperlink on this template is entitled **Proteinuria** and when launched, it displays the following information:


Dm Crf Proteinpop
Proteinuria
Albumin is the most abundant urine protein in most types of chronic kidney disease.
Low molecular weight (LMW) globulins are the most abundant urine proteins in some types of chronic kidney disease.
Proteinuria includes albuminuria, increased urinary excretion of other specific proteins, and increased excretion of total urine protein.
Albuminuria refers to increased urinary albumin excretion.
Microalbuminuria refers to excretion of small but abnormal amounts of albumin.
OK
Cancel

After the hyperlink entitled **Proteinuria**, there are **two facts about proteinuria** which are very important:

1. Protein is an early and sensitive marker of kidney damage in many types of kidney disease.
2. Albuminuria is a more sensitive marker than total protein for chronic kidney disease due to diabetes, hypertension and glomerular disease.



Following these statements, there is a box in which the "**degree of proteinuria**" is automatically documented.

Note: In order for the "degree of proteinuria" to be calculated an **albumin/creatinine ratio** or a **protein/creatinine ratio** must be documented in the lab values.

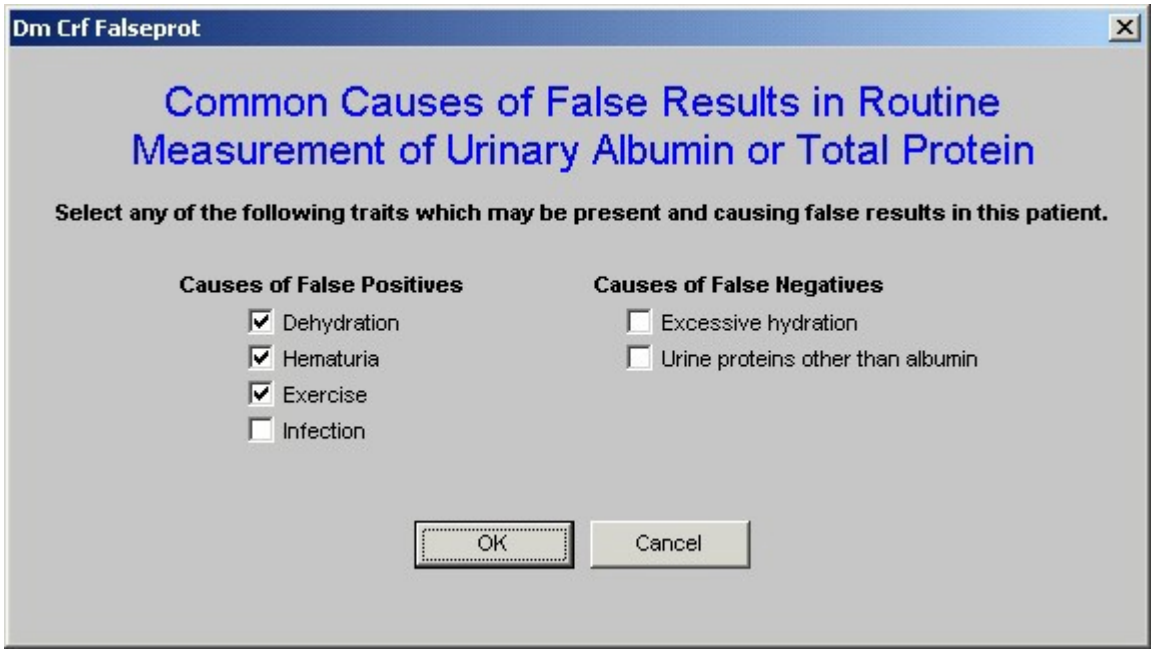
Above the box entitled "degree of proteinuria," there is a button of the same name, which when launched displays the following information:

Degree of Proteinuria

normal:	< 150 mg/24hr
microalbuminuria:	30-300 mg/24 (specifically albumin; usually measured in diabetics)
trace proteinuria:	150 to 500 mg/24 hr

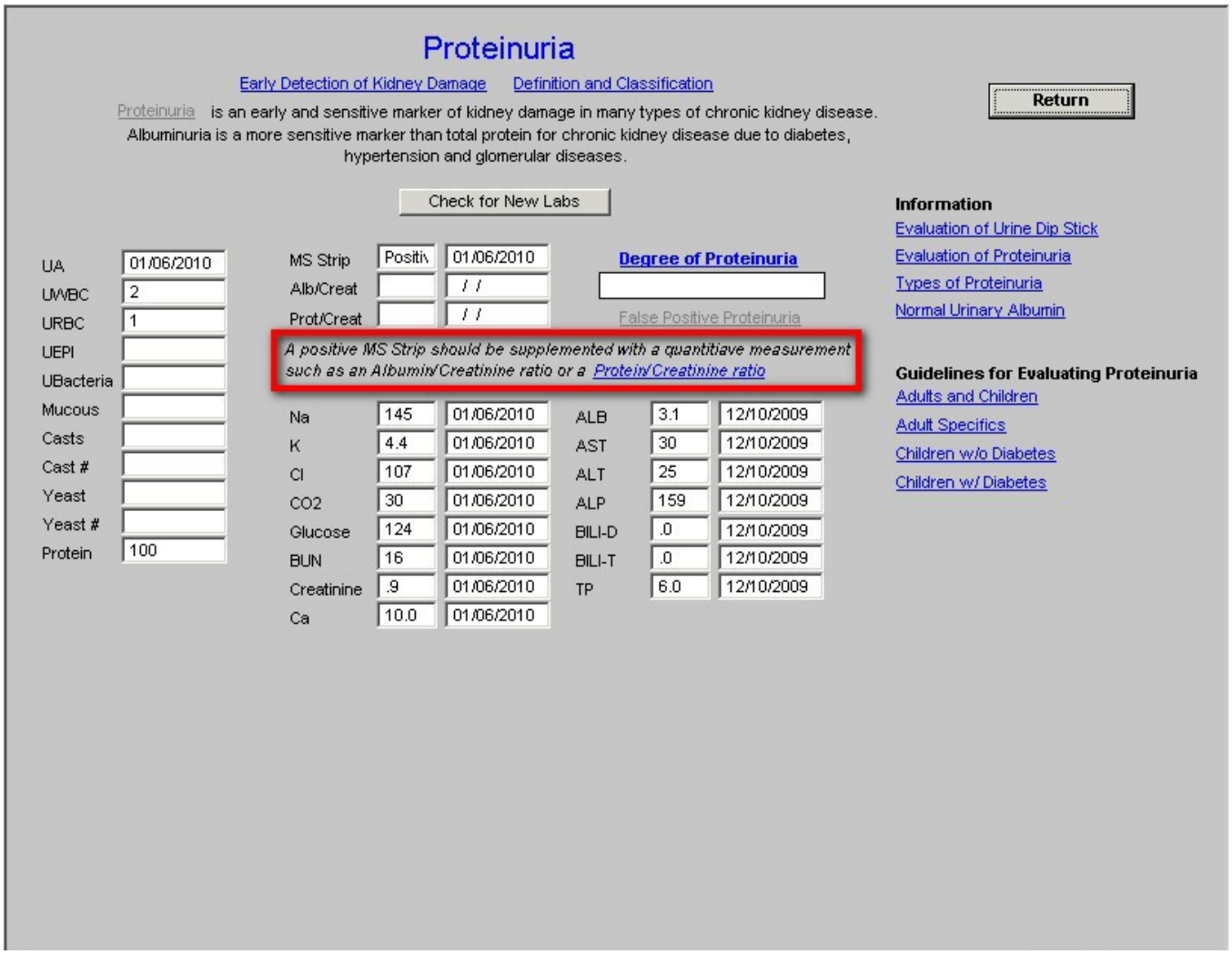
mild proteinuria:	500 mg to 1 g/24 hr
moderate proteinuria:	1-3 g/24 hr
	nephrotic range proteinuria: > 3 g/24 hr

Beneath the box in which "degree of proteinuria" is displayed, there is a button entitled, "**False Positive Proteinuria**." When this button is clicked, the following pop-up is displayed..



This allows the provider to document the presence of any condition which might influence the measurement of urinary protein and which might give a false value.

Below the **Degree-of-Proteinuria box**, there is a caution about the **MS Strip or Micral Strip**. See it below outlined in red.



A hyperlink is attached to the phrase "**Protein/Creatinine Ratio**," which when launched displays the following:

Evaluation of Proteinuria

Spot protein/creatinine ratio estimates 24-hour excretion of protein in grams/24 hr. To perform the test, a random urine sample is submitted to the laboratory for protein concentration (in mg/dL) and creatinine concentration (in mg/dL). The protein/concentration is divided by the creatinine concentration, and the unit-less number is the estimated daily protein excretion in gm/24 hrs. An abnormal ratio is >0.15, which estimates a 24 hour protein excretion of >150 mg/day (>0.15 gm/day). Many nephrologists recommend using protein/creatinine ratios to quantify protein excretion instead of a 24 hour urine collection.

Beneath this information is a display of 15 lab values pertinent to Proteinuria evaluation.

To the right of this information there is a series of **information buttons** which launch documents on:

- Evaluation of Urine Dip Stick
- Evaluation of Proteinuria
- Types of 'Proteinuria
- Normal Urinary Albumin

Followed by a series of articles entitled "**Guidelines for Evaluating Proteinuria**."

- Adult and Children
- Adult Specific
- Children without Diabetes
- Children with Diabetes