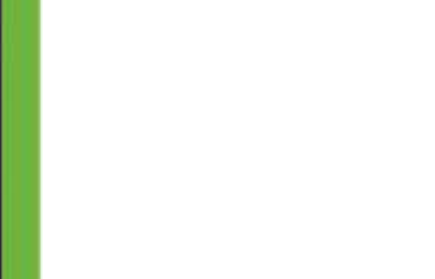


**Focus on Proteinuria in CKD:
Dietitian's Perspective
Yvonne McIntosh, RD**



Proteinuria: RD Perspective

Nutrition Factors:

- Sodium
- Protein
- Glycemic control/Weight loss?

What dietary advice do we give our patients?

Translating guidelines into real life/ practical food & meals ideas.

Sodium/Salt

<2g/day sodium

↑ **Na Diet:** ↑ BP, albuminuria, induces hyperfiltration of kidney, blunts response of anti-HTN meds used to protect the kidneys (ACE/ARB's).

↓ **Na Diet:** reduces BP, lowers albuminuria, minimizes edema

Na Restriction: Significant reduction in proteinuria by 19% (Swift, 2005).

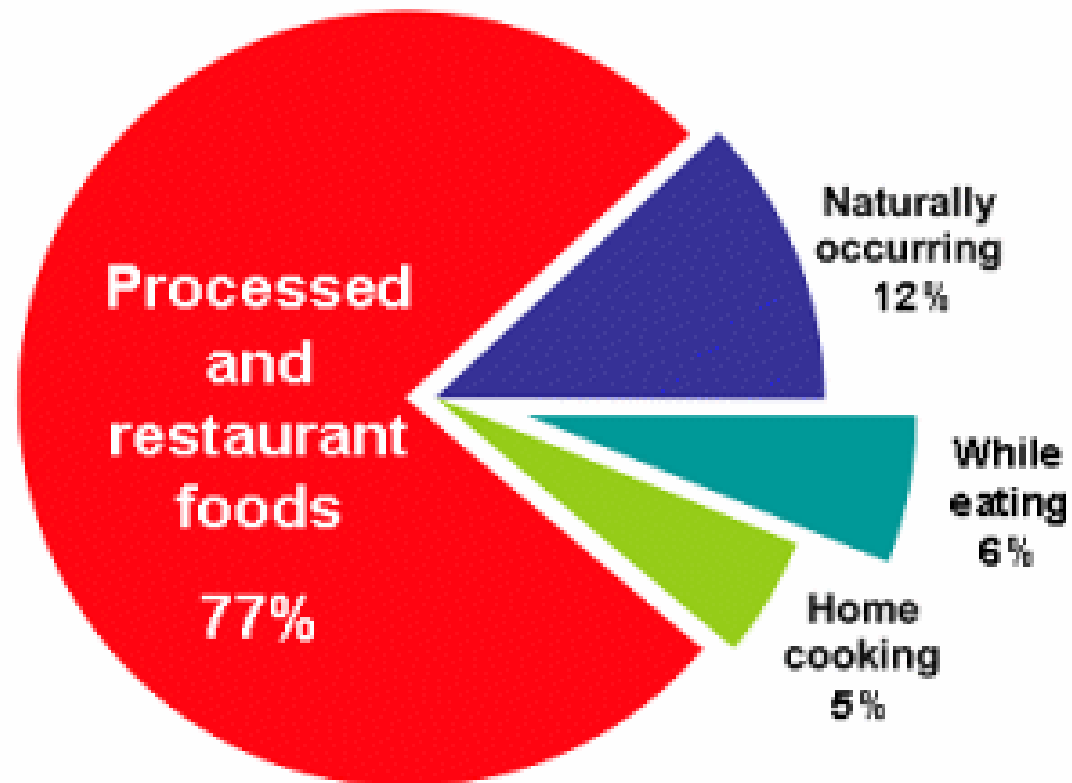
More effective than dual ACE + ARB treatment for reduction of proteinuria and BP in non-diabetic nephropathy. (Slagman, 2011)

But. . .

“My salt is fine – the doctor/nurse said my blood sodium was normal.”

“I don’t use salt, we don’t even have a salt shaker in the house.”

Most Sodium Comes from Processed and Restaurant Foods



But . . .

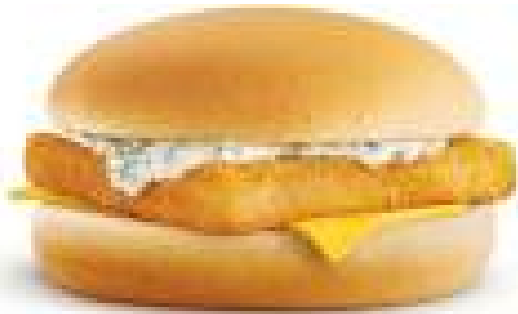
“I don’t use salt – I use Kosher salt, sea salt, ...”

“It doesn’t taste salty”

“Everything has salt – I can’t eat anything if you tell me not to eat salt.”

Salt

Its not the Salt Shaker... Its not just Fast Food...



Small changes add up!



Ham
800mg Na



Tuna
100mg Na

Nutrition Facts

Serving Size 1 can (163 mL)

Servings per Container 3.5

Amount per serving

Calories 30 Calories from Fat 0

Total Fat	0g	0%
Saturated Fat	0g	0%
Cholesterol	0mg	0%
Sodium	520mg	22%
Total Carbohydrate	6g	2%
Dietary Fiber	1g	4%
Sugars	5g	
Protein	1g	

All-Day Breakfast

Skillets

Protein Protein Skillet 10.99
Egg, scrambled with ham, cheddar, onion, green onions, tomato & chives served over bed of fresh spinach. Also topped with hot sauce, served with toast.

Protein Skillet 10.99
Scrambled egg served on a bed of fresh spinach, bell pepper, onion, tomato & green onions. Also topped with hot sauce, served with toast.

Five Meat Skillet 11.99
Bacon, beef, sausage, ham, ham & sausage, served with scrambled egg served on a bed of fresh spinach, onion, tomato, onion, tomato, served with toast.

Texas Skillet 10.99
Egg, scrambled with sausage, beef, onion, onion, cheddar, served on a bed of fresh spinach, onion, tomato, onion, tomato, served with toast.



Omelettes

Protein Omelette 7.99
Bacon & cheddar omelette, cheddar, onion, tomato, served with toast.

Cheddar Omelette 6.99
Cheddar, onion, tomato, served with toast.

Protein Omelette 6.99
Cheddar, onion, tomato, served with toast.

Texas Egg Omelette 6.99
Sausage, onion, tomato, served with toast.

On the side

- Bacon 0.99
- Mini-Omelette, Cheddar Bacon or Ham, served with toast 4.99
- Cheddar Bacon 1.99
- Protein 0.99
- Mini Egg 1.99
- Bacon (1/2 oz) Sausage 1.99
- Protein Bacon 1.99
- Side of Protein Bacon 1.99
- Protein Eggs 1.99
- 4 small French fries served hot 1.99
- Cheddar Omelette 1.99



Additional food items available at our locations. See our menu for details.



% Daily Value (DV)
5% DV or less is a little.
15% DV or more is a lot.

Fresh is Best!



“The importance of salt intake
in the general management of
CKD patients cannot be
overemphasized”
(KDIGO 2012)

Protein

0.8g/kg/day

Avoid high protein intake >1.3g/kg/day

RDA = 0.8g/kg/day for general population

Appears to be no advantage to going < than 0.8g/kg/day. Risk of malnutrition-correlated morbidity & mortality.

Protein

Excess protein:

- ↑ uremic toxins (suppress appetite & stimulate muscle protein wasting)
- urinary stone formation
- contributes to ↑ K/P04

Insufficient protein:

- loss of lean body mass
- malnutrition

Protein

Not too high, not too low...

- **0.8g - 1.0 g/kg shows improvement in proteinuria** (Chauveau 2007, Franz, 2006)
- 0.8g/kg show improvement by 17%, ACE 19%, diet + ACE 63% (Gansevoort, 1995)
- High protein diet (1.6g/kg) found to increase proteinuria in nephrotic patients. (Kaysen, 1985)
- **Do not put patients on high protein diet for low albumin. Aim for 0.8g -1.0g/kg**

Protein

$$\frac{0.8\text{g/kg BW} \times 50\text{-}70\%\text{HBV}}{7\text{g protein/oz}} = \underline{\hspace{2cm}} \text{oz /day}$$

HBV= High biological value

-meat, fish, poultry, dairy, legumes

-Does not include small amounts of protein in grains, fruit/veg.

5-7oz/day appropriate for most people

But....

“What is a Protein food?”

- Beef, poultry, fish
- Milk and dairy
- Eggs
- Beans, lentils, soy
- Peanut butter



“What is an ounce?”

1 oz = ~30g = thumb

3oz = deck of cards



“What type of Protein is best for my kidneys?”



Quality fresh, unprocessed, avoid additives (Na, K, P₀₄)

“What type of Protein is best for my kidneys?”

In General, aim for:

- Fish 2-3x/wk
- Beef less often than chicken, turkey, or pork
- Nuts, Legumes & Soy as Potassium allows

Vegetarian protein may be beneficial compared to animal protein (esp. red meat)

- GFR, renal plasma flow, albumin excretion, lipid metabolism acid-base balance, BP control
- Caution with high K & processed veg. choices (ie. Veggie hotdogs)

Cupisti, A. Effect of Dietary Factors on Proteinuria and endothelial dysfunction in renal patients. *Journal of Renal Nutrition*, Vol 19, No 5S, 2009.

“But I will be hungry on that amount of protein!”

- Ensure adequate:
 - Calories to meet needs
 - Carbs to ensure optimal utilization of protein
 - Healthy fats
 - Fibre – fruit, vegetables, grains (lowK/P04)
- Distribute protein throughout the day

True or False?

A high protein diet is NOT recommended for low albumin in Nephrotic syndrome.

A high protein diet can increase blood potassium.

3oz = a deck of cards

A moderate reduction in dietary protein can improve proteinuria.

Glycemic Control

Target HBA1c ~ 7.0%

- Consider:
 - Consistency of meal patterns
 - Balanced meals – CHO, protein & fat
 - Carb portions
 - Fibre
 - Glycemic Index
 - Carb Counting
 - *Wt loss*

In Summary

Nutrition Factors in Proteinuria:

Sodium – 2g/day

· Protein – 0.8-1.3g/kg/day

Glycemic control

Always considering:

Potassium & phosphorus

The individual patient – age, QOL, cultural foods, food security, nutrition status, etc...

EAT 3 BALANCED MEALS EVERY DAY

Each sample meal includes a balance of grains, protein, vegetables and fruits.
Include snacks, water and other fluids to complete your day.



BREAKFAST



LUNCH



DINNER



SNACKS