



**OWN
YOUR
HEALTH**

**ST. PAUL'S HOSPITAL
COMMUNITY FORUMS**



How you want to be treated.

St Paul's Hospital
FOUNDATION



Inspired care.



DEPARTMENT OF MEDICINE
PROVIDENCE HEALTH CARE



ST. PAUL'S HOSPITAL
COMMUNITY FORUMS

Let's talk about AMAZING KIDNEYS

What they do and what happens
when they don't work so well...

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ST. PAUL'S HOSPITAL
COMMUNITY FORUMS

Introduction

Information

Medications

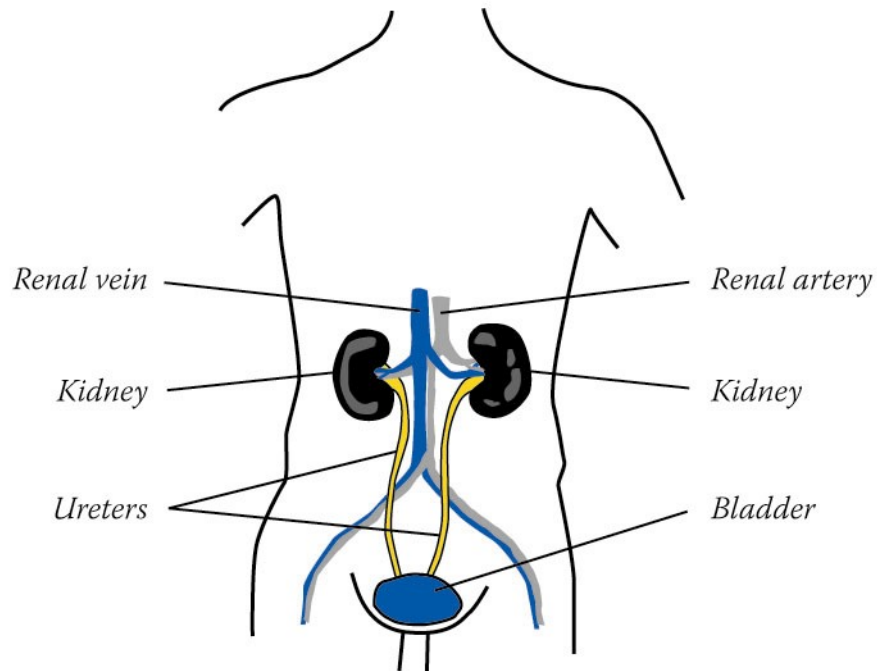
Healthy Kidneys

Lifestyle

Monitoring

Diet

Where are your kidneys?





Amazing Kidneys : what do they do?

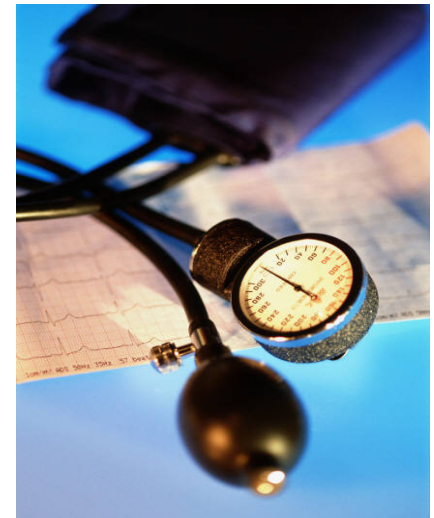
- Control blood pressure
- Excrete waste products
- Balance internal milieu of the blood
- Secrete or activate important hormones





Amazing Kidneys : what do they do?

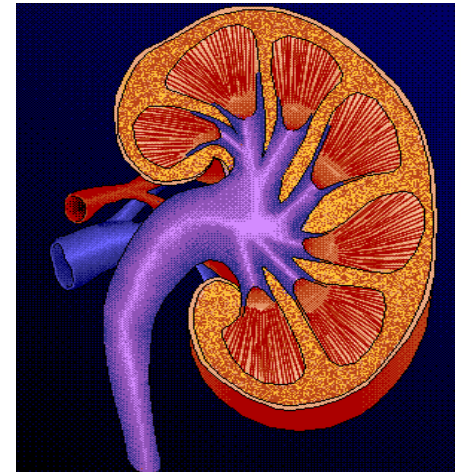
- Control blood pressure
 - salt and water
 - hormones (angiotensin, aldosterone)
- Excrete waste products
 - Urea, creatinine and other stuff
- Balance internal milieu of the blood
 - Acid, potassium, calcium, phosphate
- Secrete or activate important hormones
 - Vitamin D, Erythropoietin ,





Amazing kidneys

- Filter 120 L of blood per day
- Receive 20% of cardiac output
- Normal urine output ~1-2 L per day
- Balance salt and water excretion over wide ranges of intake





Simple Measures of kidney health

- Blood pressure
- Blood tests (measure if kidney is filtering properly)
 - creatinine (~used in equation which estimates kidney function filtration = Glomerular filtration rate (GFR))
- Urine tests
 - Urine protein or albumin
 - Urine red cells, whites cells (inflammation)



Chronic Kidney Disease



What is Chronic Kidney Disease?

- Kidney disease describes a variety of diseases and disorders that affect the kidneys.
- Most kidney diseases attack the filtering units of the kidneys—the nephrons—and damage their ability to eliminate waste and excess fluids.



Chronic Kidney Disease

- Chronic kidney disease (CKD) is defined as the presence of kidney damage, or a decreased level of kidney function, for a period of three months or more.
- CKD can be divided into five stages, depending on how severe the damage is to the kidneys, or the level of decrease in kidney function.

Kidney function: Glomerular Filtration Rate (GFR)








- GFR is an mathematical estimation of your kidney function
- Based on age, gender and creatinine (kidney blood test)
- It may be described as a percentage of kidney function

5 stages of CKD



Five Stages of Chronic Kidney Disease

	Stage 1 Early	Stage 2 Mild	Stage 3 Moderate	Stage 4 Severe	Stage 5 ESRD
Amount of kidney function remaining at each stage	> 90%	60-89%	30-59%	15-29%	<15%
					
eGFR (estimated Glomerular Filtration Rate)	90 ml/min or more	60-89 ml/min	30-59 ml/min	15-29 ml/min	15 ml/min or less

Chronic Kidney Disease is a growing problem



Stage	Description	GFR (ml/min/1.73 m ²)	Prevalence 1 Extrapolated directly from US	Prevalence 2 Extrapolated US data, adjusted Cdn dialysis prevalence
1	Kidney Damage with Normal or ↑ GFR	>90	792,000	478,500
2	Kidney Damage with Mild ↓ GFR	60-89	720,000	435,000
3	Moderate ↓ GFR	30-59	1,032,000	623,500
4	Severe ↓ GFR	15-29	48,000	29,000
5	Kidney Failure	<15 or (or dialysis)	(24,000)	14,500



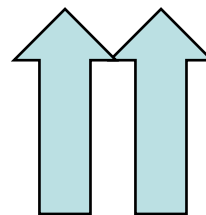
Did you know?

- Kidney disease can strike anyone at any age.
- An estimated two million Canadians have kidney disease, or are at risk.
- Each day, an average of 14 Canadians learns that their kidneys have failed.
- In 2008, there were 36,638 Canadians on renal replacement therapy and this number is expected to double over the next 10 years.

What Are Signs Of Kidney Disease?



High blood pressure



Swelling around eyes



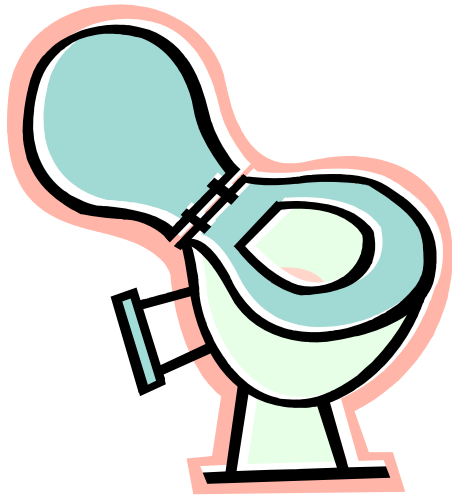
Swollen feet



What Are Signs Of Kidney Disease?

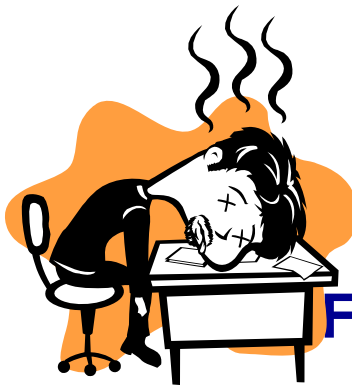
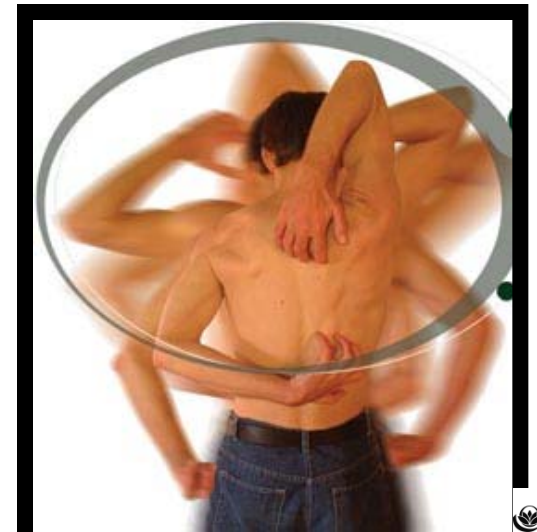


Loss of appetite



Change in bathroom habits

Itch



Feel tired



Summary : Signs and symptoms of kidney disease

- High blood pressure
- Fluid retention
 - Swelling of the ankles/ legs
 - Puffiness of eyes
- Changes in urine colour or consistency
 - Red or brown; frothy urine
- Fatigue
- Itching
- Muscle cramping
- Loss of appetite/ weight/ unusual metallic taste

Who should be tested for Kidney Disease ?



- People with
 - diabetes mellitus
 - Hypertension
 - heart failure
 - atherosclerotic coronary, cerebrovascular or peripheral vascular disease
 - a family history of ESRD
- Specific ethnic groups
 - First nations peoples
 - Oriental Asians and South Asians
 - Pacific Islanders/ African- Canadians



Reasons for Kidney Disease/ Changes in Kidney Function

Acute Changes



Chronic Changes

- Severe infections
 - Drugs
 - Arthritis drugs, some antibiotics,.....
 - Systemic diseases (rare)
 - Lupus, Vasculitis,
 - Obstruction
 - Kidney stones, Prostate,
- Diabetes
 - High blood pressure
 - Inherited kidney diseases
 - Polycystic Kidney Disease
 - Alport's/ Fabry's
 - Heart failure



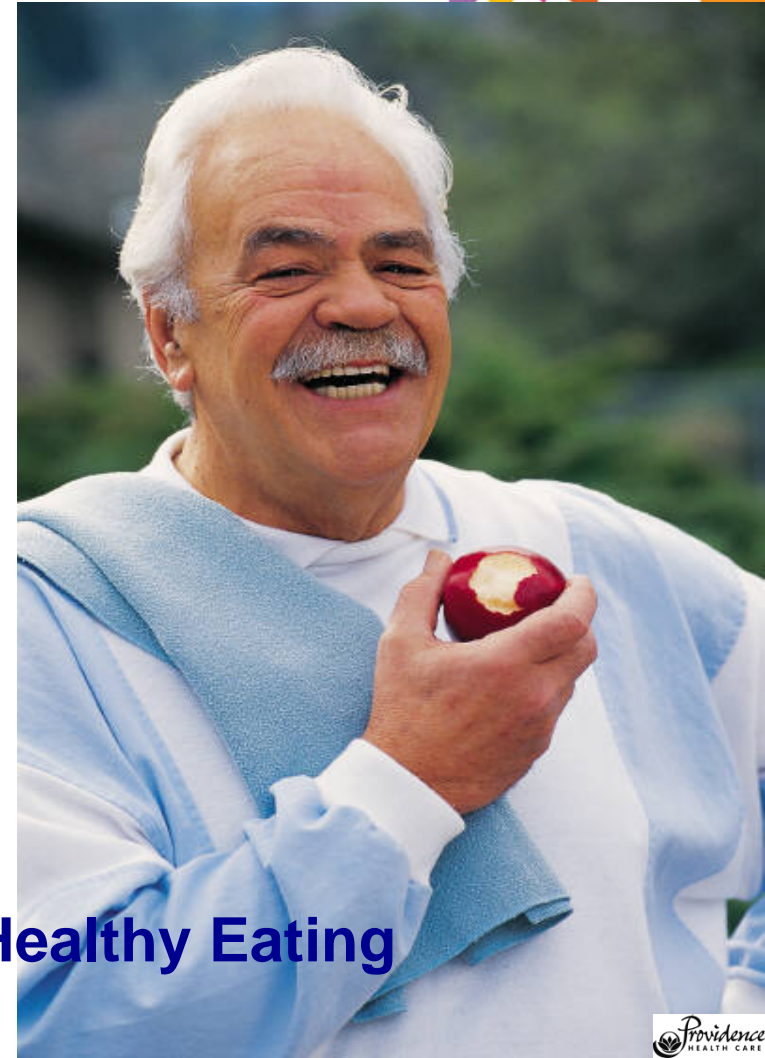
What happens if I have CKD

- Determine the cause and ensure any reversible cause is treated
- Regular monitoring of blood tests, urine tests and blood pressure
- Dietary advice
- Review and adjustment of medications
- Referral to kidney doctors/kidney team
 - not always necessary (depends on stage)

Can I prevent more damage?



Exercise



Healthy Eating

Targets of therapy



- Blood pressure <130/80
- Blood sugar control
- Diet
 - Reduce protein and phosphate intake
- Reduce proteinuria/ urine ACR
- Awareness of drugs to avoid or change
- Regular follow-up / monitoring

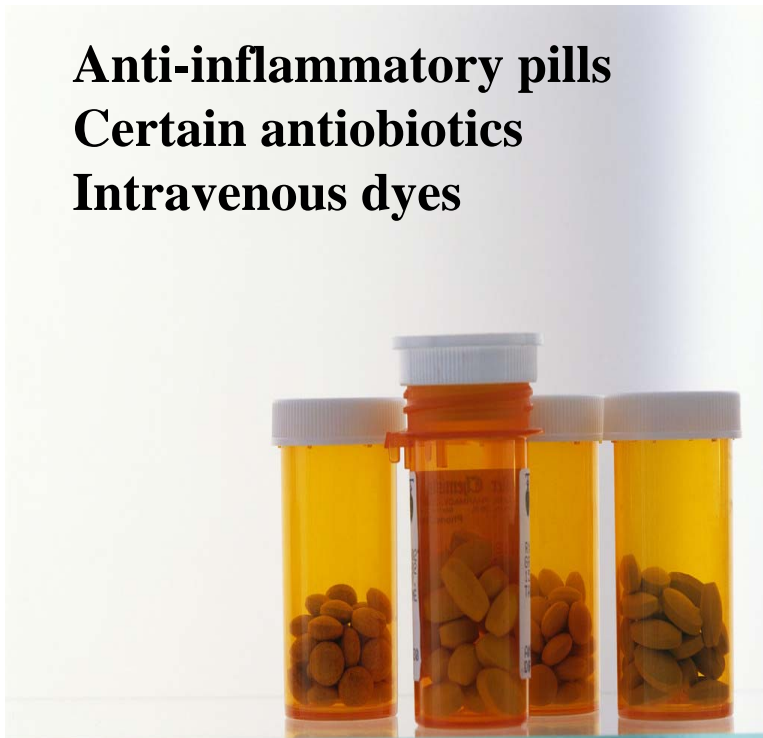




Preventing more damage

Avoid certain medications

Anti-inflammatory pills
Certain antibiotics
Intravenous dyes



Smoking





Overarching Goal of therapy

- Reduce symptoms and prevent complications
- Make timely treatment decisions
- Delay or avoid dialysis
- Prepare for dialysis or transplant

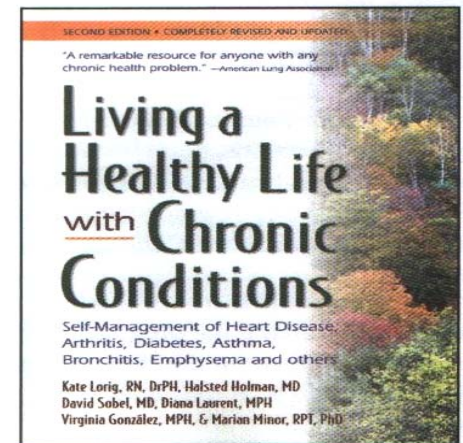
Self management



- Manage your symptoms
- Change your lifestyle
- Talk to your health care team
- Manage your fears and frustrations
- Learn to problem solve
- Get more out of life

The Chronic Disease Self-Management Program

*Living a Healthy Life
with Chronic Conditions*



University of Victoria



The BC Ministry of Health Service Providence HEALTH CARE

The outcomes of people with CKD are variable



- No progression
 - Stable reduced kidney function
- Slow progression without kidney failure
 - Reduction of kidney function of ~1-3 ml/min per year
 - Kidney function remains acceptable without symptoms or other problems, despite slow worsening
- Progression to “ End Stage Kidney Disease”
 - either slow or more rapid, the kidneys fail and there is a need to replace their function with dialysis or transplantation



Dialysis and Transplantation

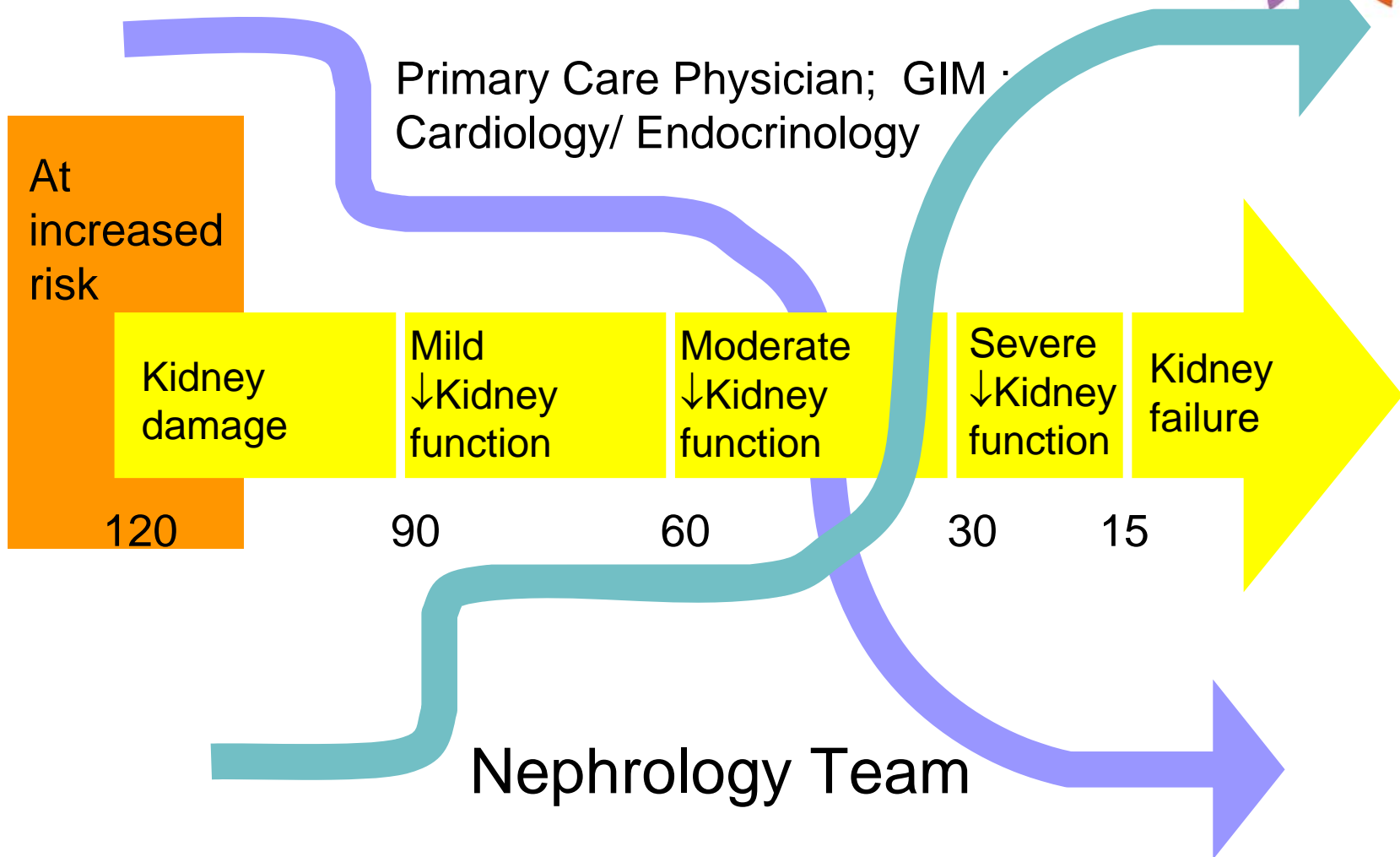
- Methods to replace kidney function (in addition to use of medications)
- Dialysis : promoting independence
 - Peritoneal Dialysis
 - Hemodialysis
- Transplantation
 - Living donors
 - Deceased donors



Dialysis and transplantation and Conservative care

- Require planning and team work
 - medical teams
 - GP and other specialists
 - Kidney team
 - family and support system

Co-Management of Pts with CKD





The bottom line

- Kidney disease is usually not anyone's fault
- Kidney disease **does** change your life
 - Working to effectively reduce the (negative) impact on you and your family is important
- There are effective strategies to improve the outcomes of kidney disease patients



Thank you to all who participate in making the lives of those living with kidney disease better

- Nurse, social workers, dieticians, pharmacists, doctors
- Peer support groups
- Kidney Foundation of Canada
- BC Renal Agency/ Ministry of Health BC

Kidney Disease Overview



Why?

Who?

When?

How?