“How is my prostate doing, Doc?”

National awareness month prostate and testis cancer

Outline

- Men’s health
- Scary facts
- Finding prostate cancer
- Seeing prostate cancer
- Managing and treating prostate cancer
- Question time

Current issues in men's health

- Men attend GP half as often as women
- Funding for research, prevention and screening < 50% of that for women
- Main DoH initiatives
  - Cancers (testicular lumps, moles, prostate)
  - Feeling depressed
  - Trouble urinating
  - Impotence – sexual dysfunction

Scary facts

- Men have a 14% higher risk of developing cancer than women
- >100 men are diagnosed with prostate cancer every day
- Suicide - single most common cause of death in men under 35
- Doubling of obesity in men from 13% in 1993 to 25% in 2011
- Men are twice as likely as women to abuse alcohol
- A quarter of deaths of men under 34 can be attributed to alcohol

Taboos


Relax, Mr. Miller. It's just a standard prostate exam.
© Original Artist
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www.CartoonStock.com

I wish……

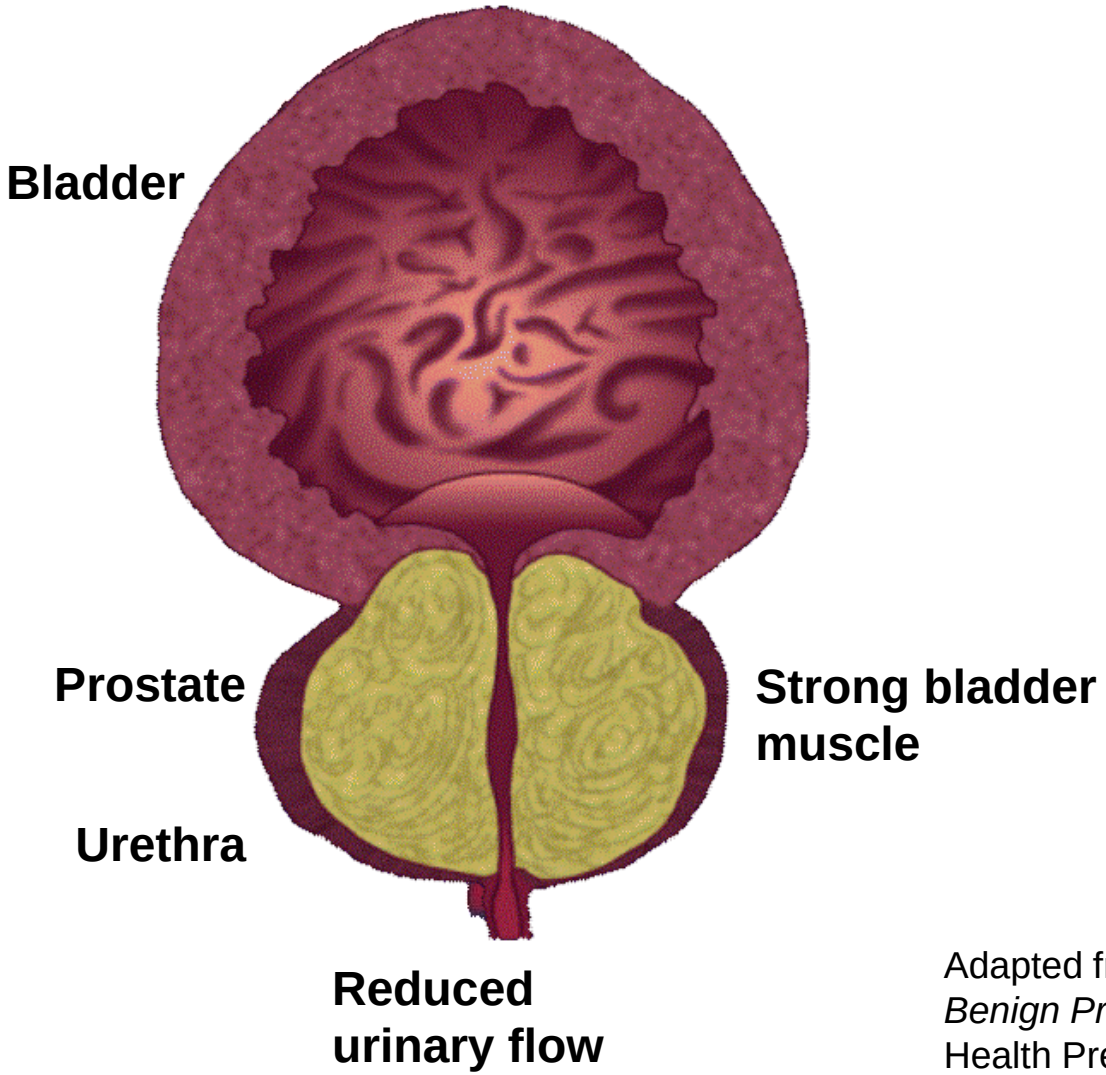

040905A000086-01
© Index Stock / PhototakeUSA.com
Viewed by Guest on 6/28/2007

Social embarrassment

Unanswered questions in prostate cancer

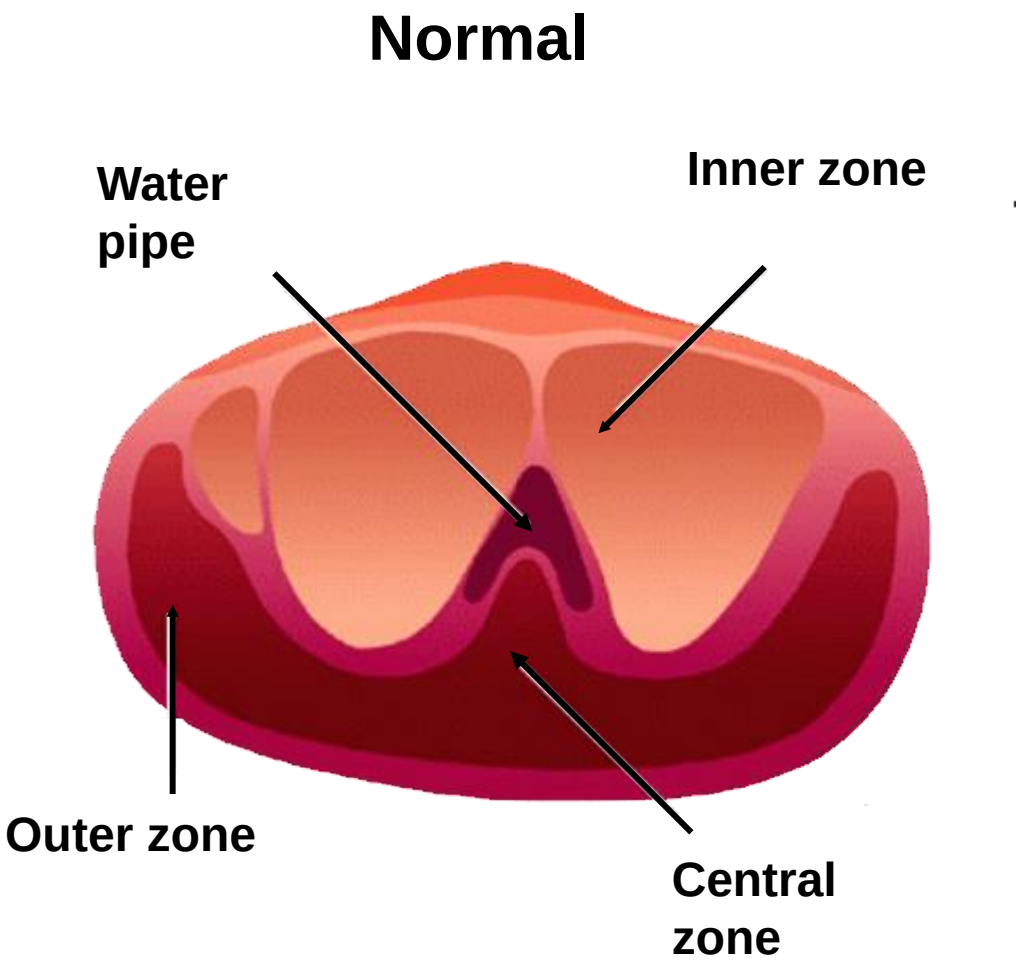
- Prevention
- Diagnosis and screening
- Treatment allocation
- Survival - survivorship
- Coping with ‘collateral damage’

Prostate enlargement



Adapted from Kirby RS *et al*. *Benign Prostatic Hyperplasia*. Health Press, Oxford, 1999

Prostate for dummies



Prostate MRI

Prostate

Finding prostate cancer

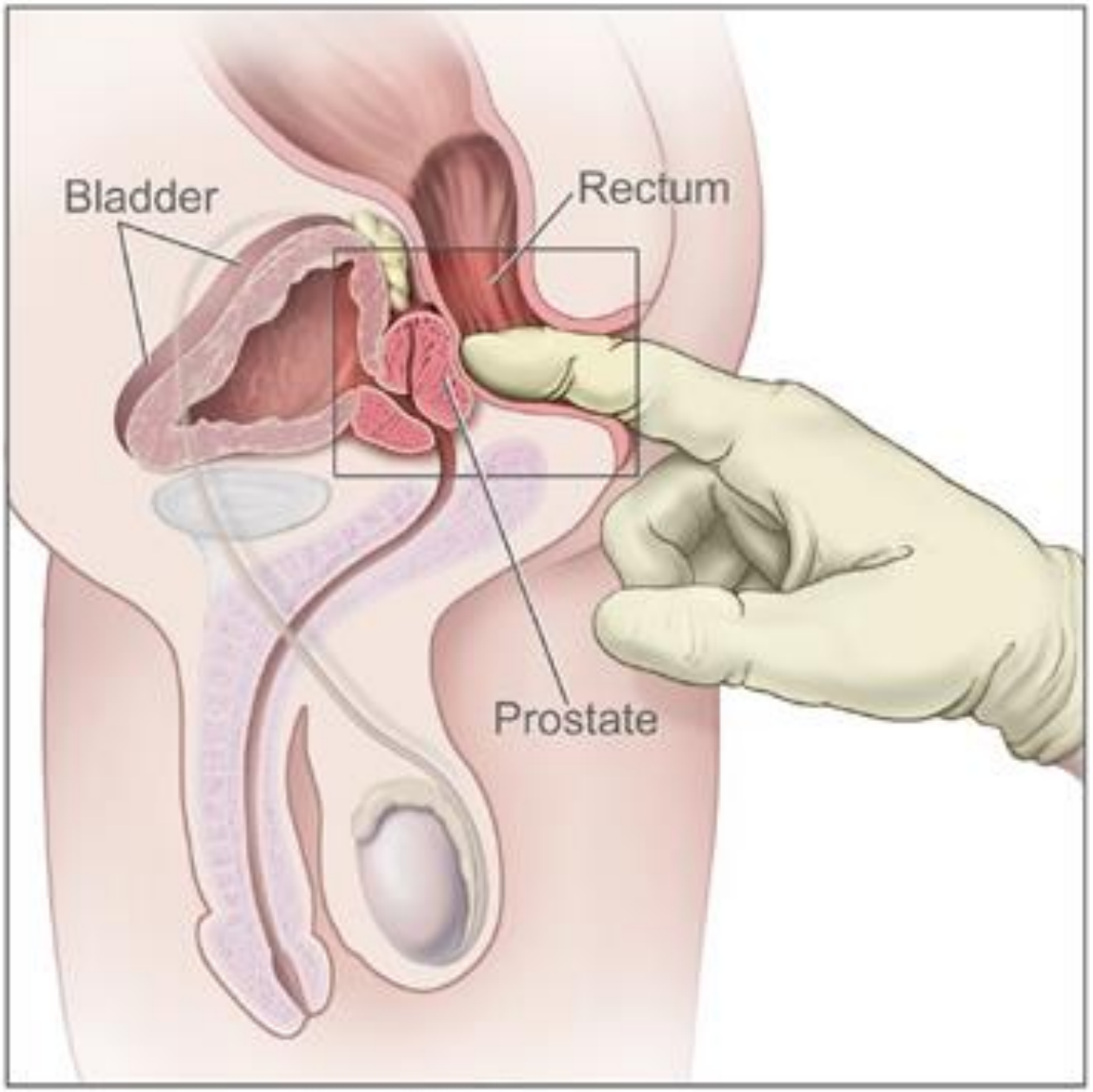
Finding prostate cancer

- Prostate examination
- Blood test – PSA (prostate specific antigen)
- PSA screening
- Imaging
  - Ultrasound
  - MRI
- Prostate biopsy


OVER THE HILL
DO IT YOURSELF
PROSTATE EXAM
PETROLEUM JELLY

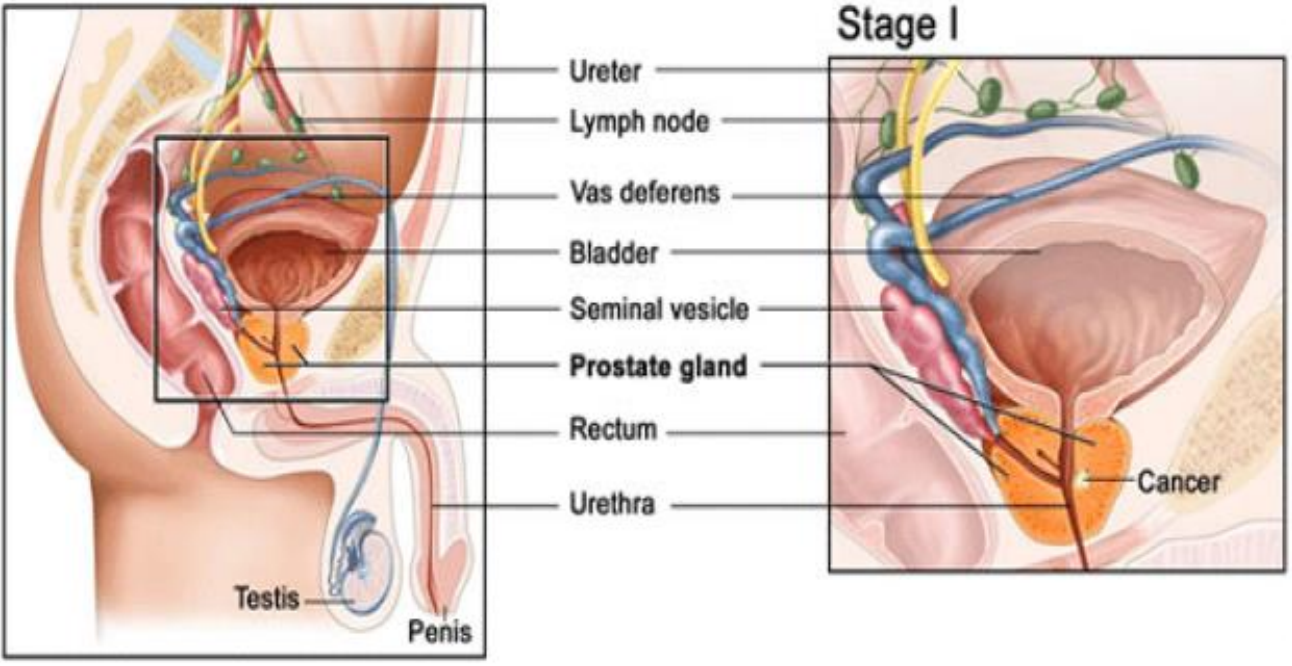
DRE – not everybody's cup of tea

Digital Rectal Examination



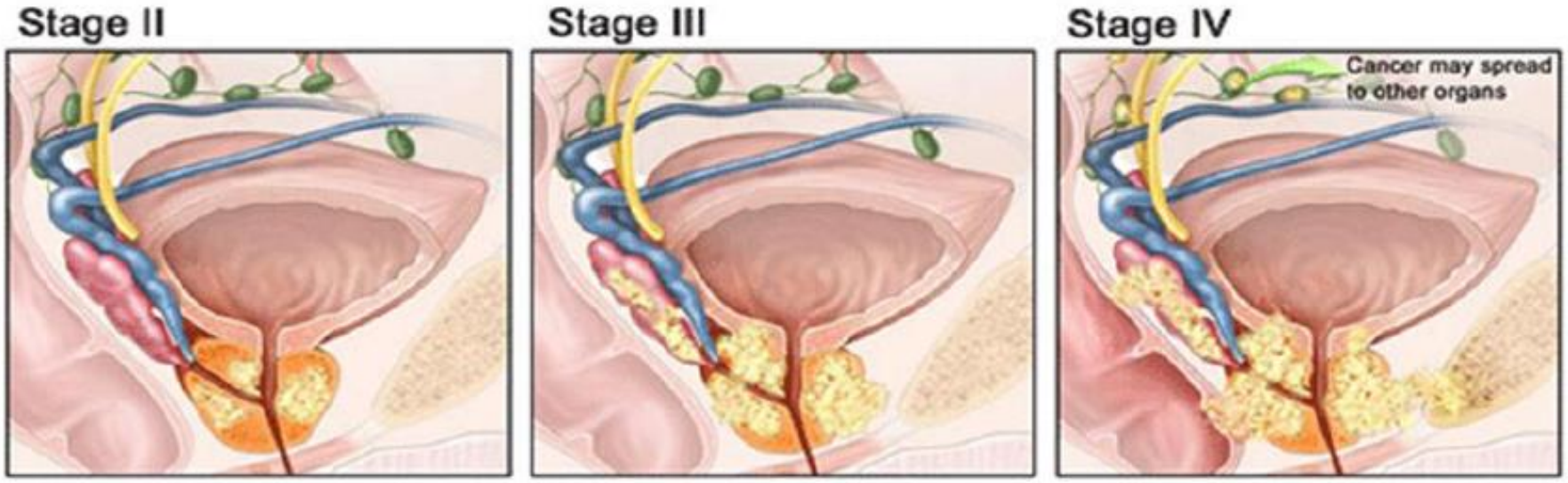
Stage 1 Disease NOT Detectable By DRE

- Stage 1 Disease
- NOT detectable by DRE

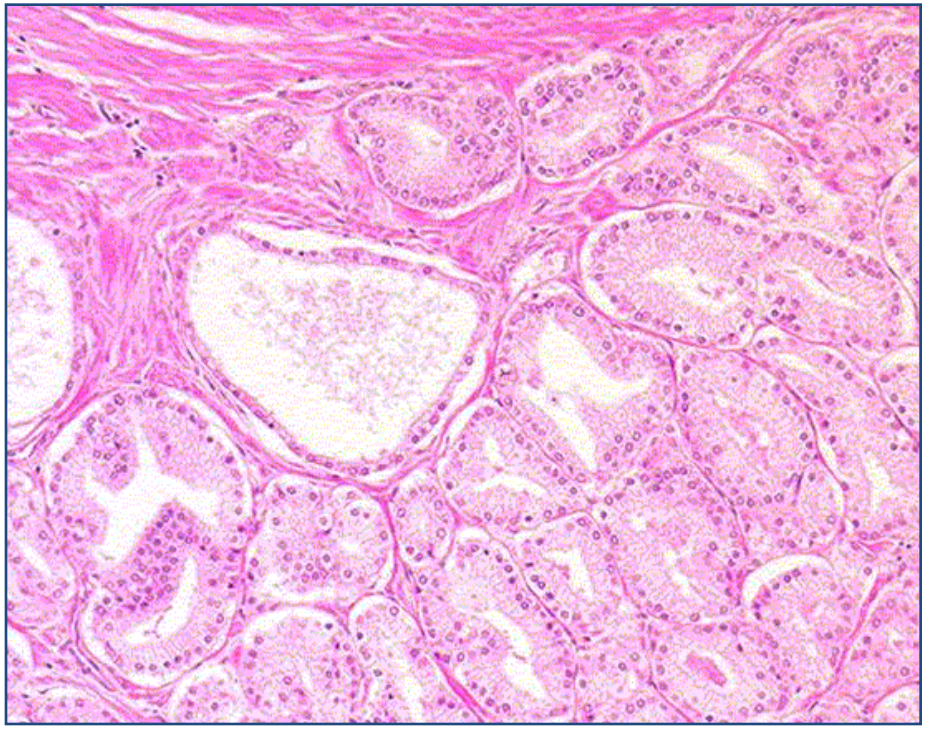


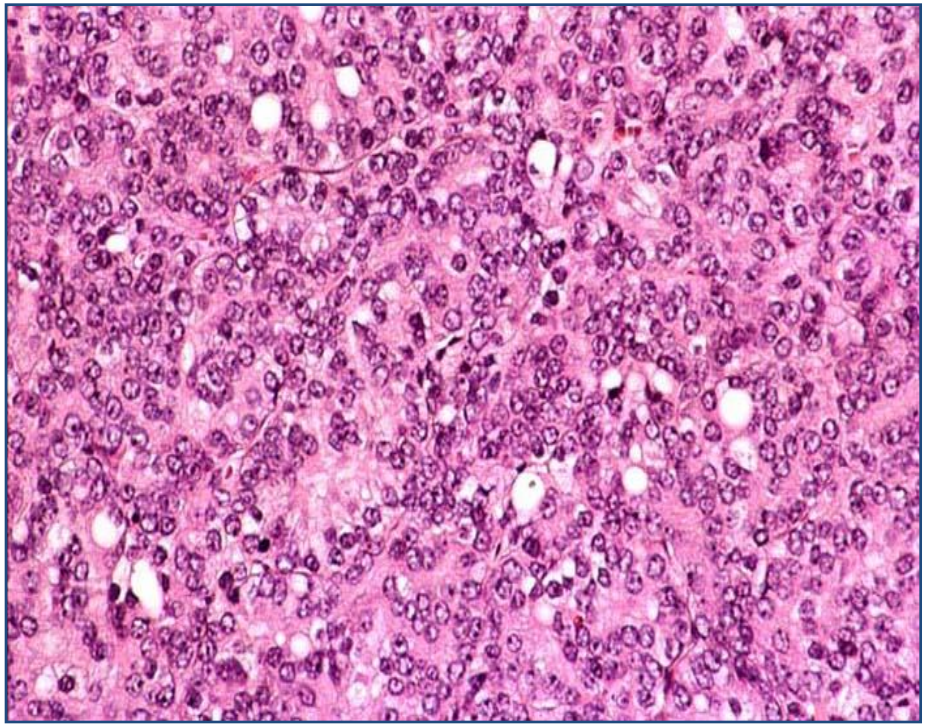
T1a	Incidental disease: < 5% Ca at TURP
T1b	Incidental disease: > 5% Ca at TURP
T1c	Tumour identified at needle biopsy due to elevated PSA

DRE - Detectable Disease



Gleason Grading

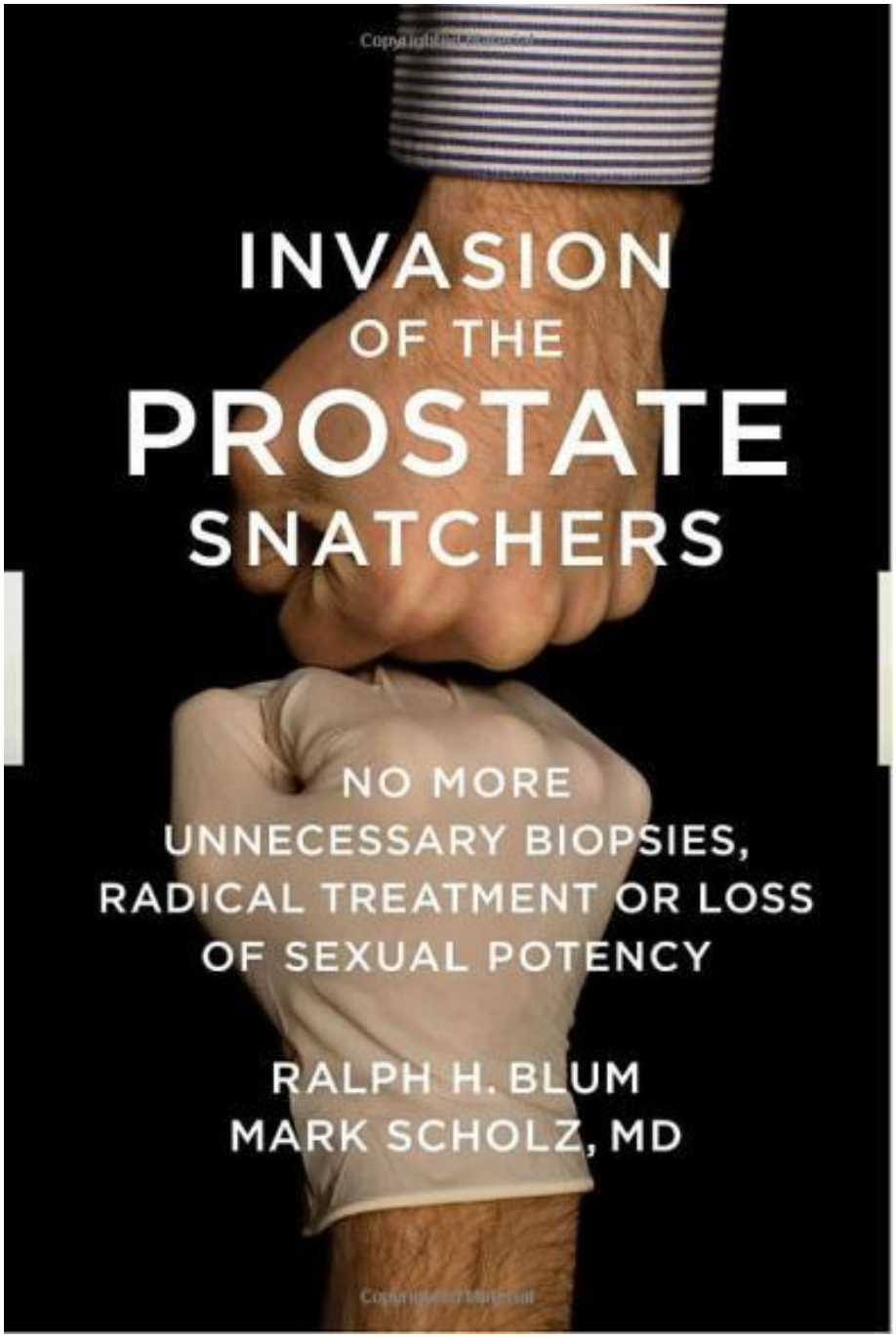




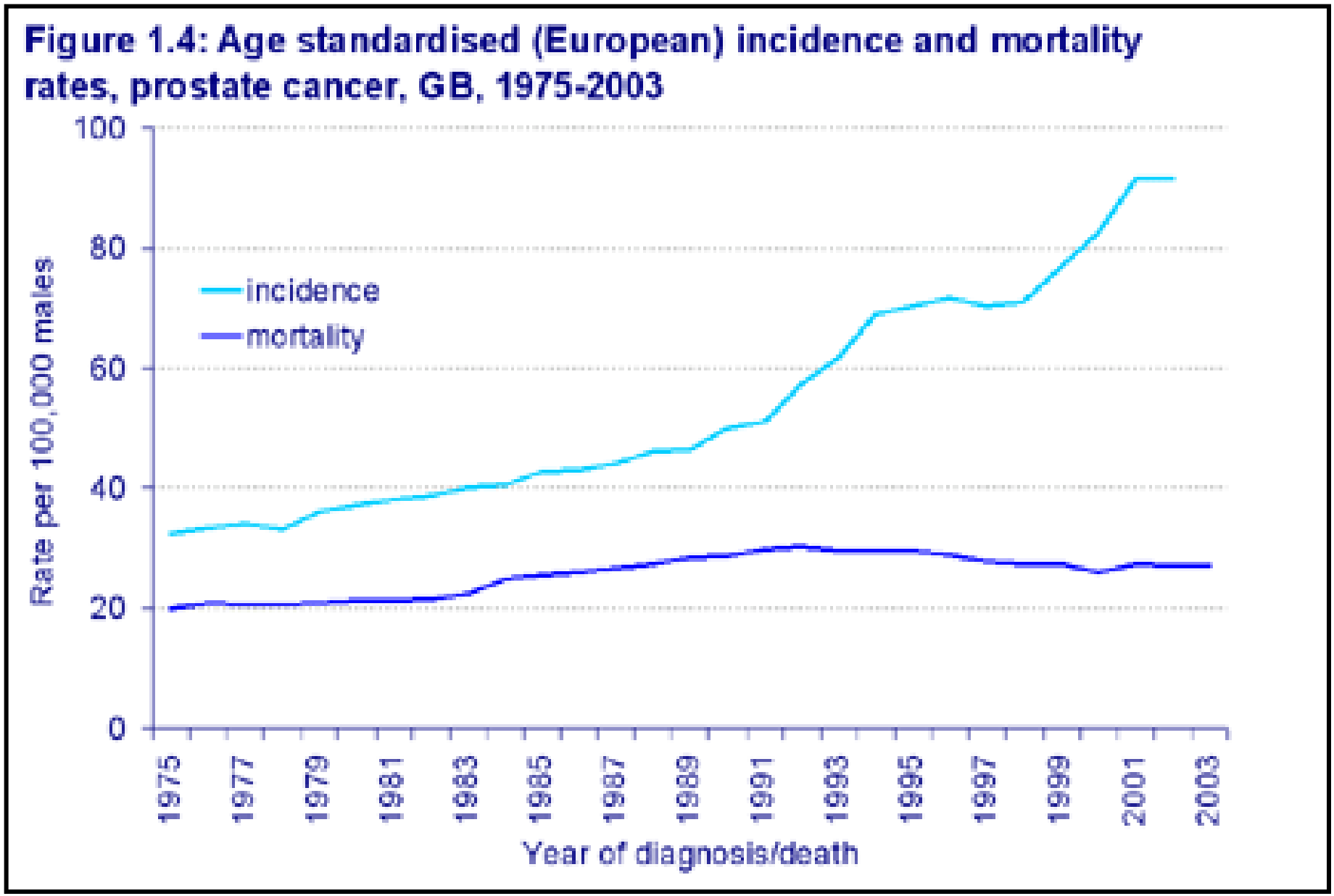
Suspected prostate cancer (NICE)

- Back pain
- Bone pain
- Weight loss (in the elderly)
- Haematuria
- Erection dysfunction
- ?family history (prostate, breast, ovarian

PSA Screening


INVASION
OF THE
PROSTATE
SNATCHERS
NO MORE
UNNECESSARY BIOPSIES,
RADICAL TREATMENT OR LOSS
OF SEXUAL POTENCY
RALPH H. BLUM
MARK SCHOLZ, MD

Incidence and mortality in the UK



Screening for prostate cancer: systematic review and meta-analysis of randomised controlled trials

Mia Djulbegovic, student,[1] Rebecca J Beyth, associate professor,[2] Molly M Neuberger, research assistant,[1] Taryn L Stoffs, research assistant,[1] Johannes Vieweg, professor and chairman,[1] Benjamin Djulbegovic, professor,[3] Philipp Dahm, associate professor[1]

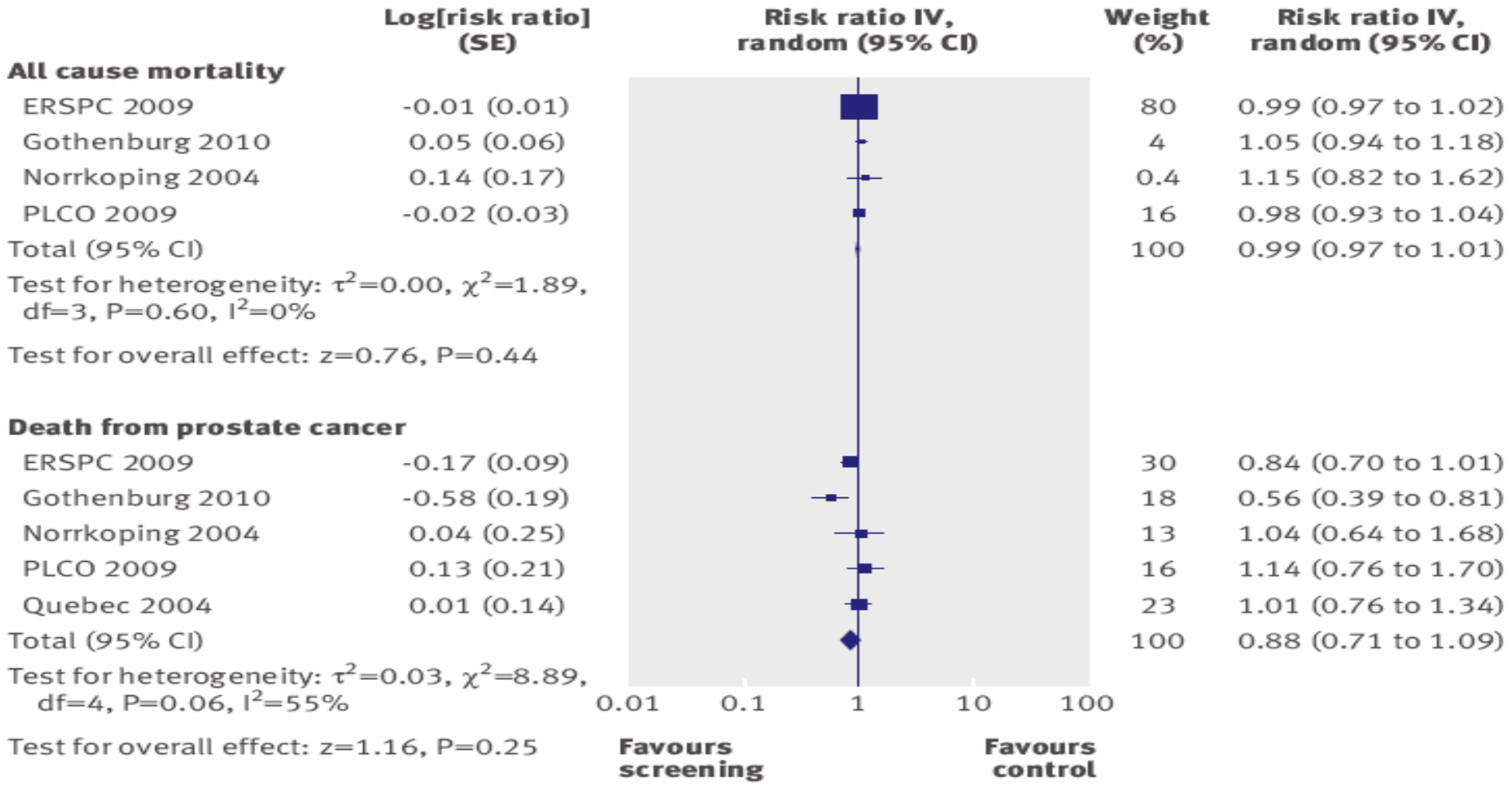


Fig 2 | Effects of screening on all cause mortality and death from prostate cancer

VOLUME 29 · NUMBER 4 · FEBRUARY 1 2011
JOURNAL OF CLINICAL ONCOLOGY
E D I T O R I A L S

Serum Prostate-Specific Antigen for the Early Detection of Prostate Cancer: Always, Never, or Only Sometimes?

Peter R. Carroll, Jared M. Whitson, and Matthew R. Cooperberg, *University of California at San Francisco, San Francisco, CA*

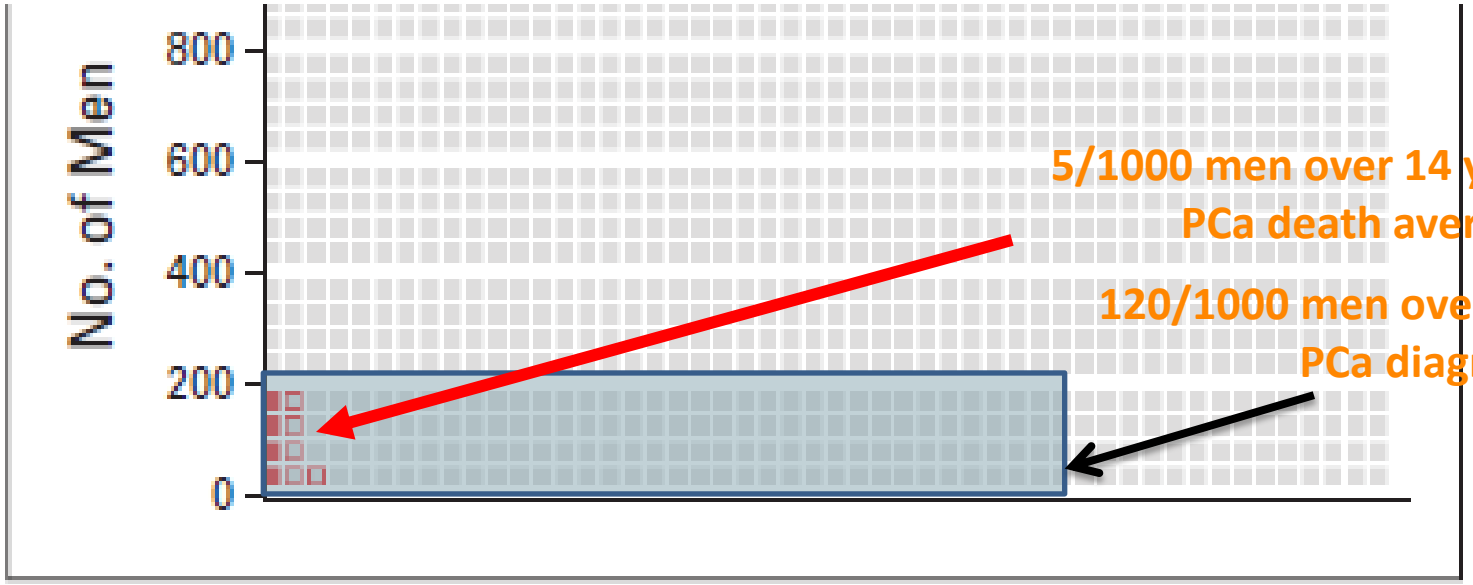


Fig 1. Absolute reduction in prostate cancer mortality. According to data from the Göteborg trial,[10] screening would reduce prostate cancer mortality from nine to four men per 1,000 at 14-year follow-up. Gray boxes indicate men who would not die as a result of prostate cancer in this time period, regardless of screening. Solid red boxes indicate men dying as a result of prostate cancer despite screening. Open red boxes indicate those among whom prostate cancer–specific mortality would be prevented by screening.

“Offer men advice, information and time to decide if they wish PSA testing”

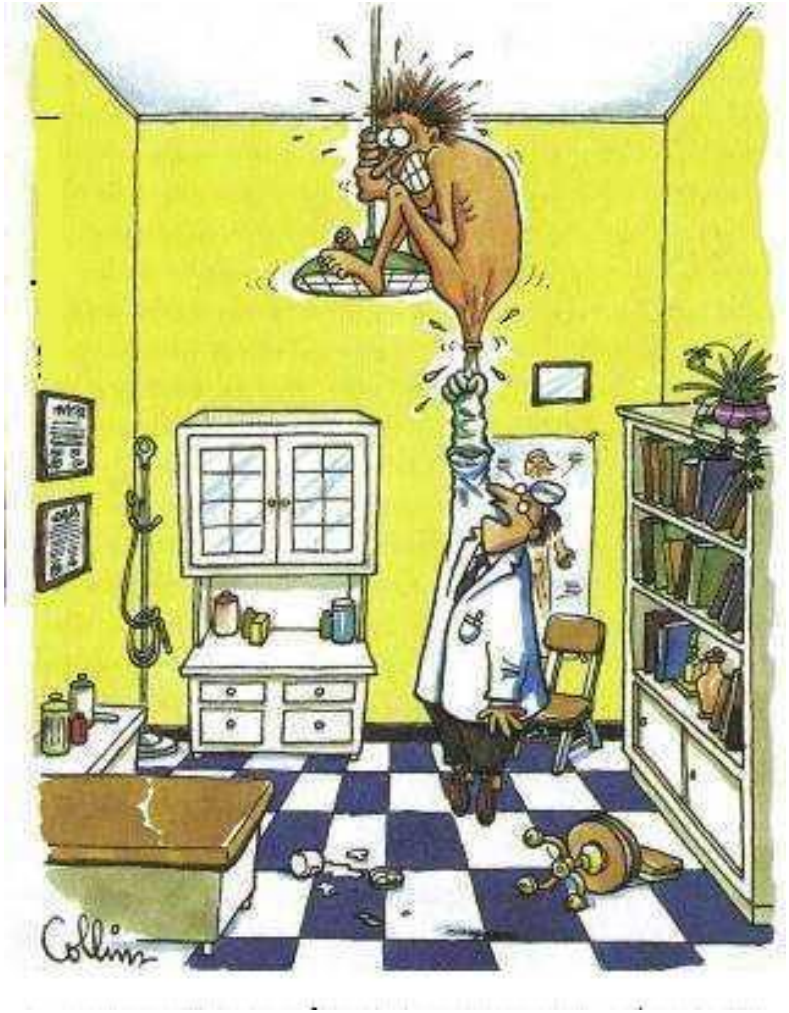
Interpreting PSA test results?

Age specific ranges – higher risk of prostate cancer

40-45 years:	2.5
50-59 years:	3.5

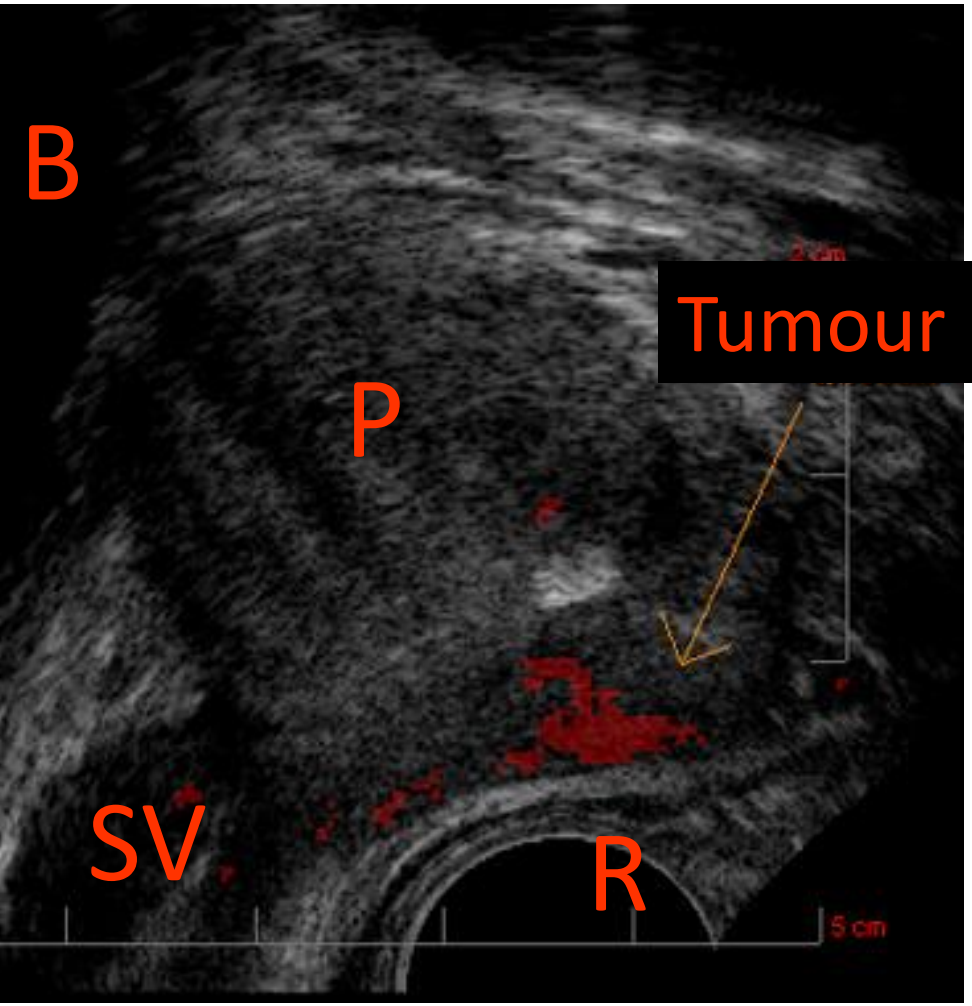
“Seeing” prostate cancer

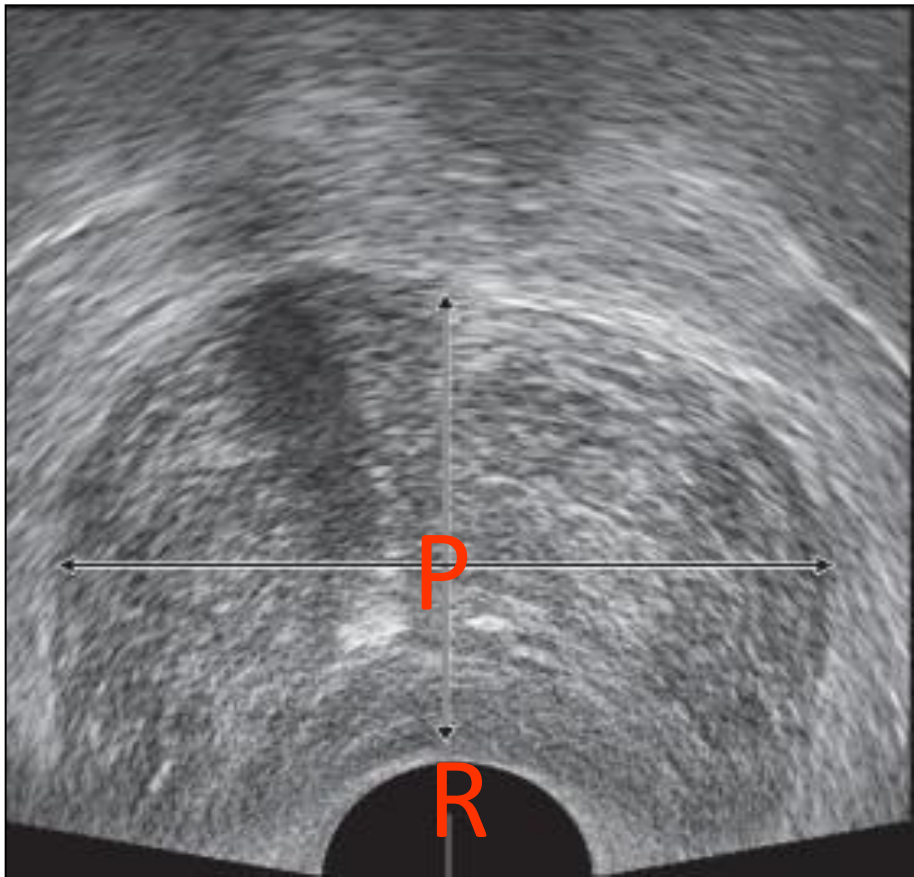
One stop prostate clinic



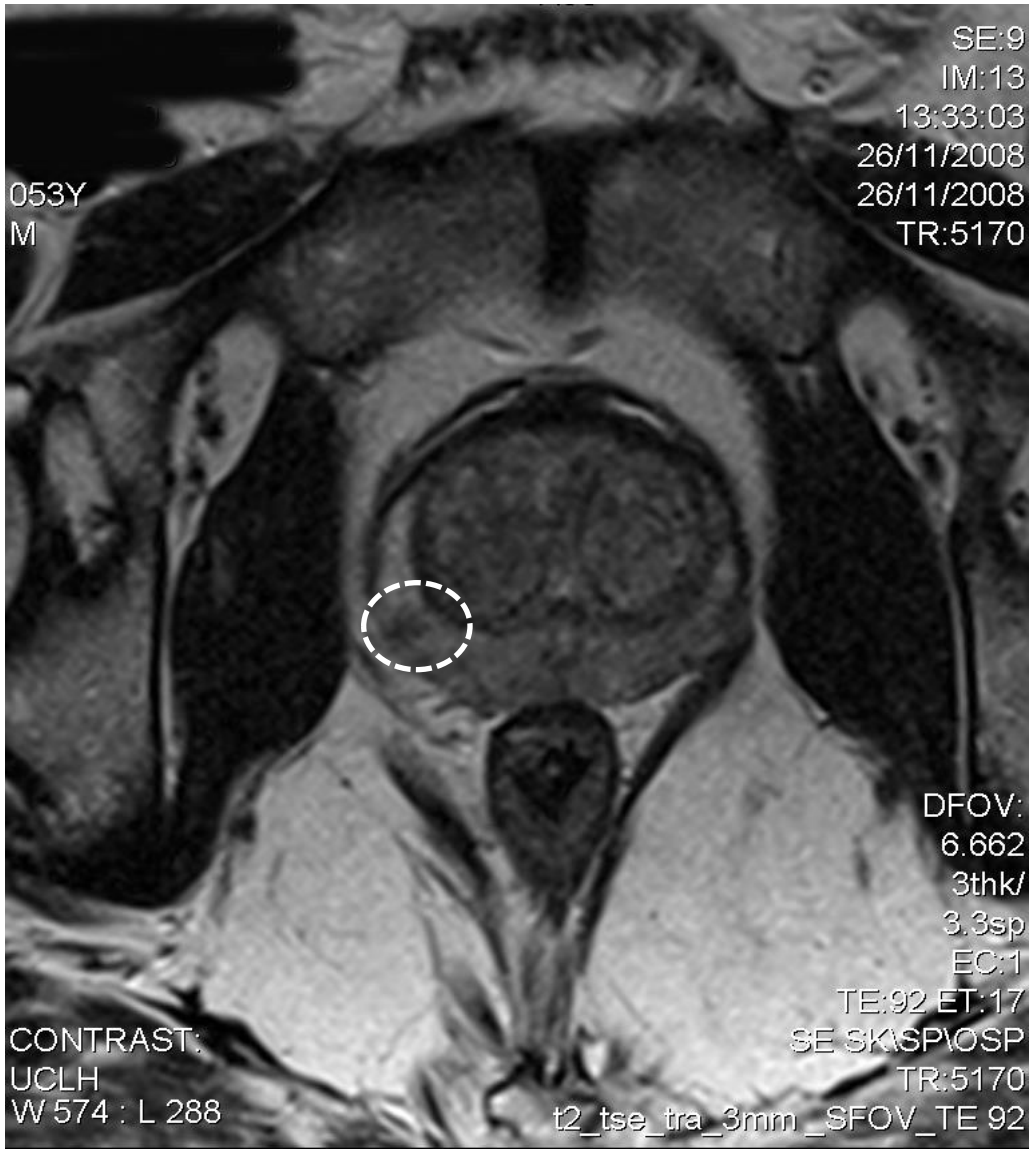
- Written advice
- Examination
- Urine test
- ?repeat PSA
- MRI
- Prostate biopsy

USS prostate image

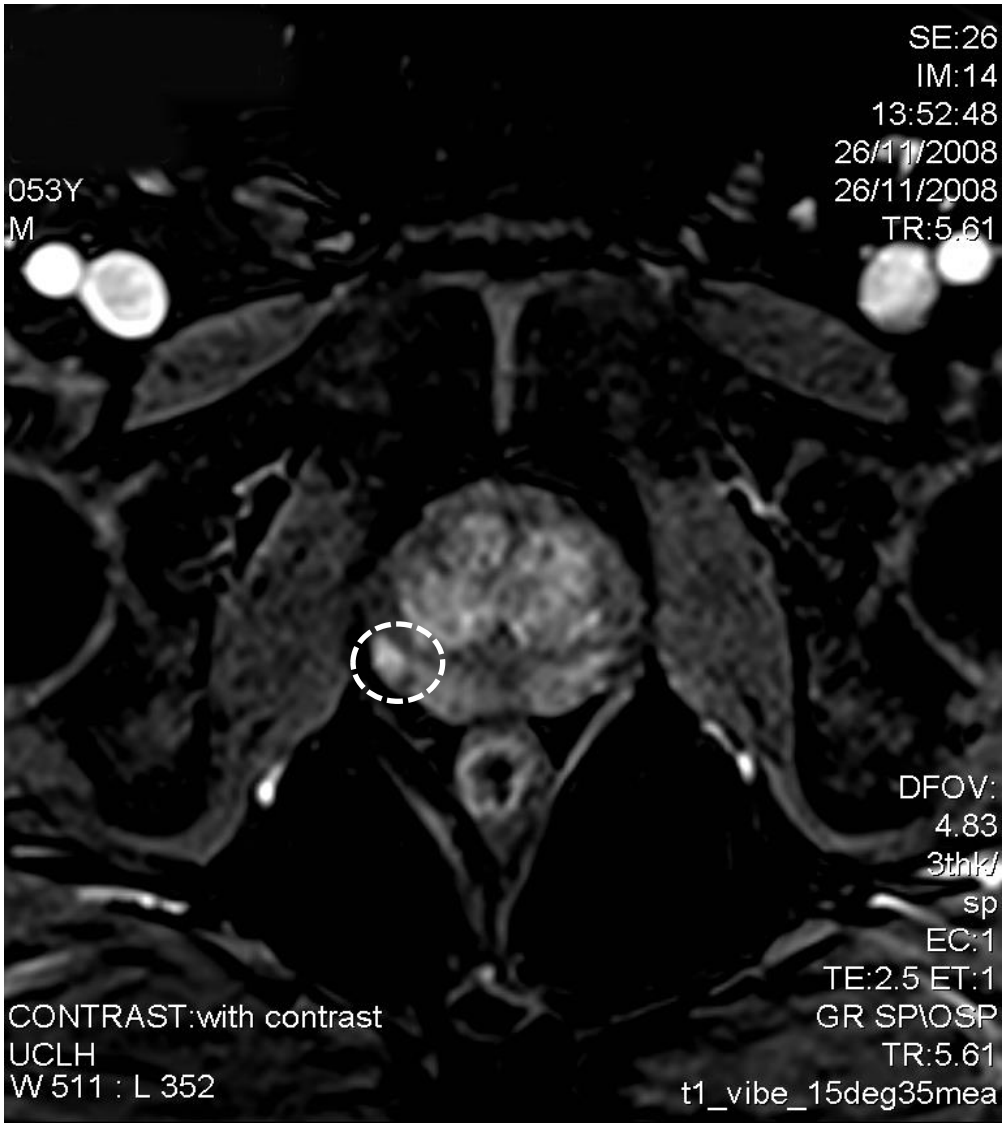




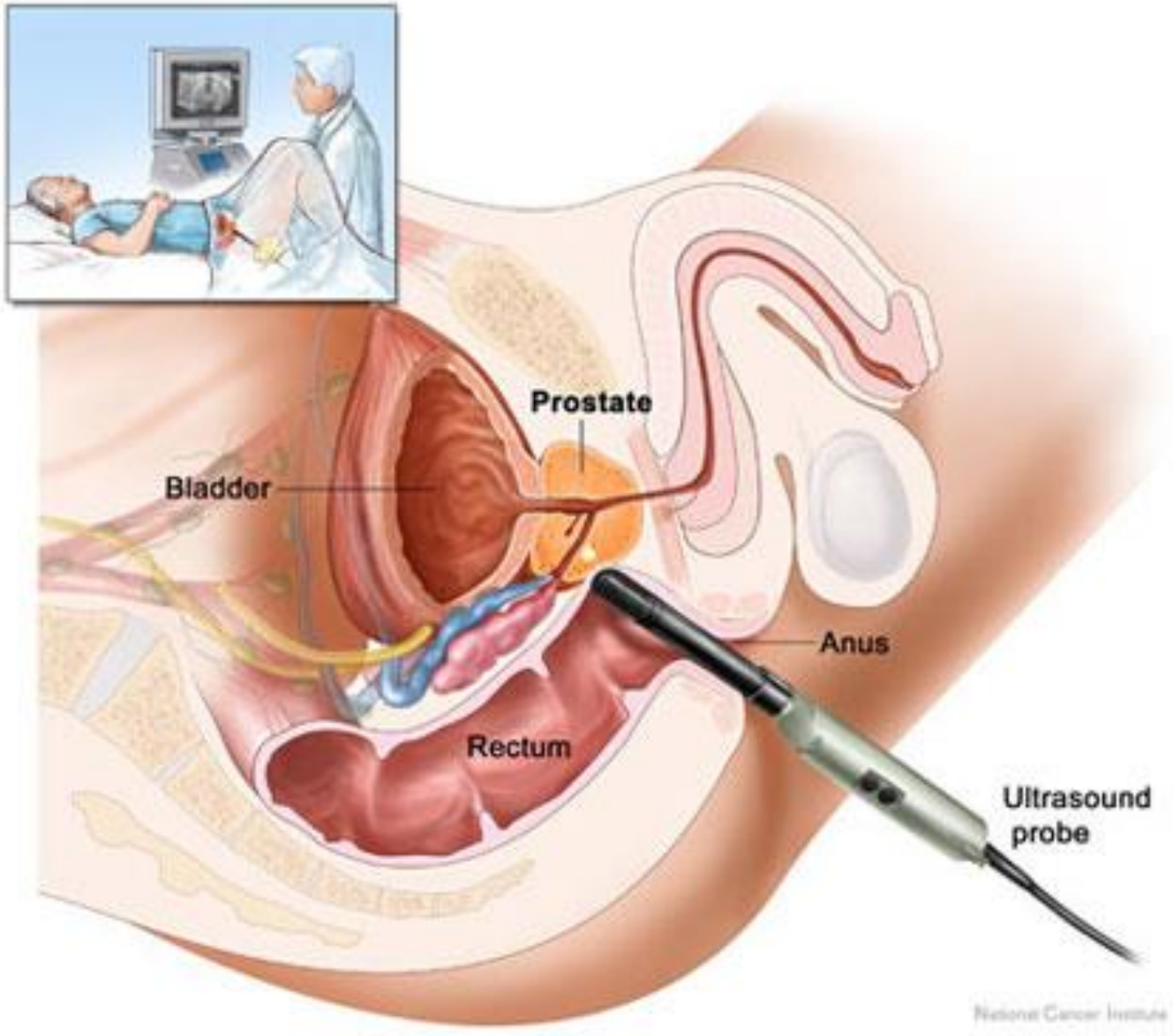
T1 weighted MRI



Diffusion weighted MRI



USS Prostate and biopsy



Managing localized prostate cancer

Should we treat ?

- Age
- Fitness
- Life expectancy
- Family history
- Prostate cancer type
- Preference

Evidence of Indolent PCa – Post Mortem Incidence

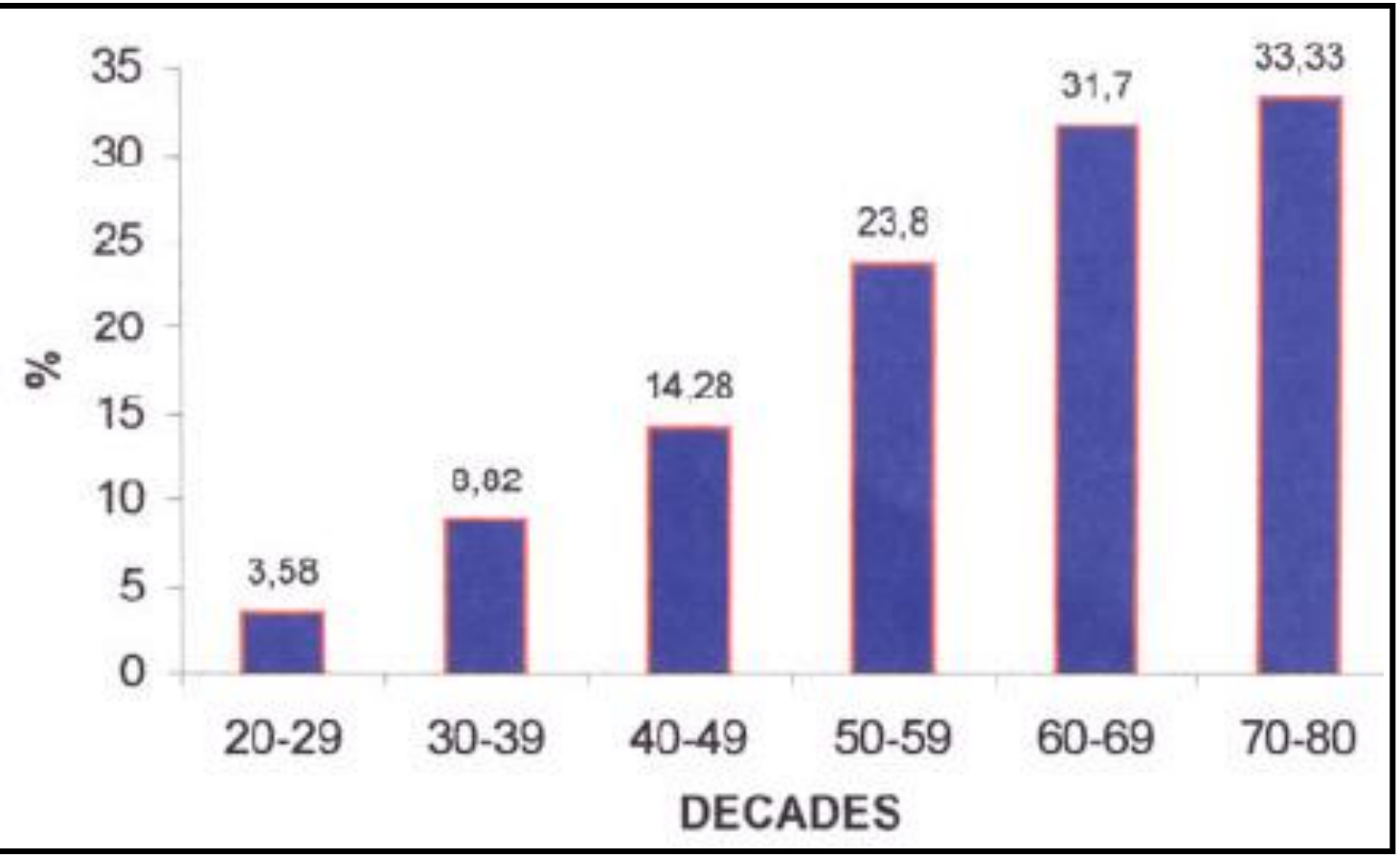
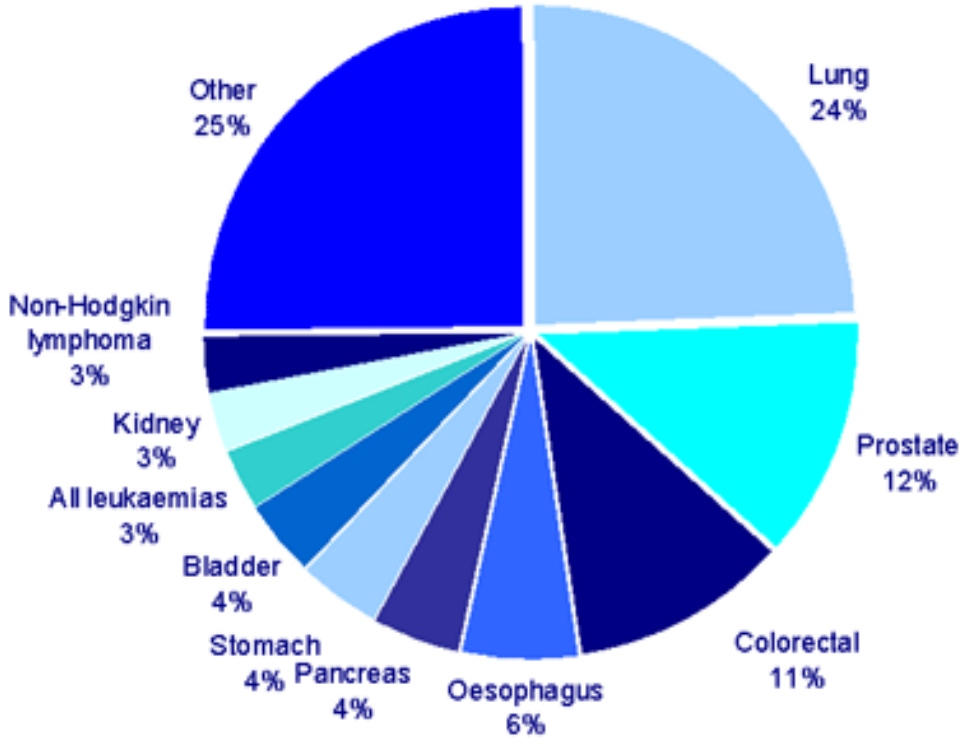
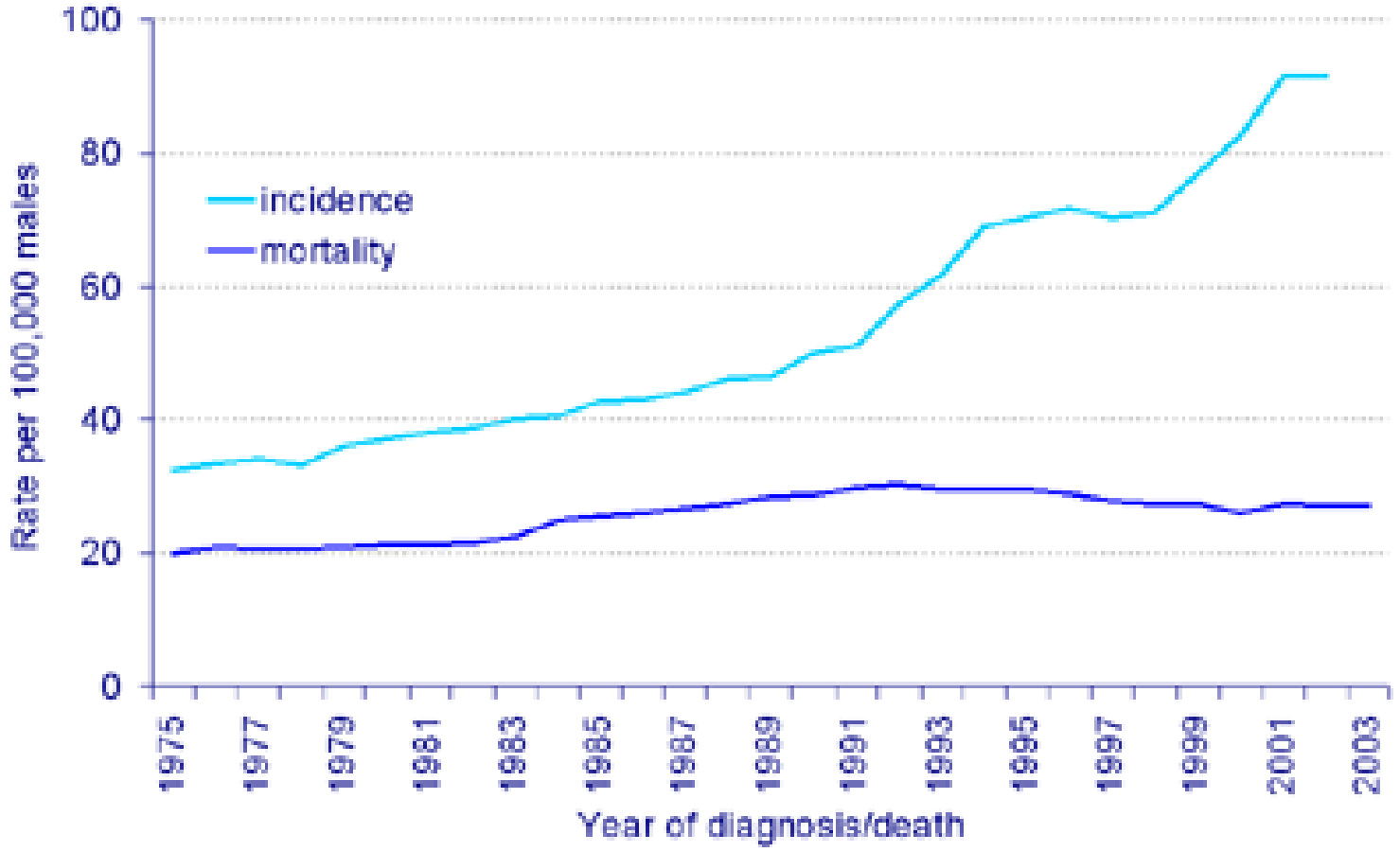


Figure 4.1: The ten most common causes of cancer death, males, UK, 2006

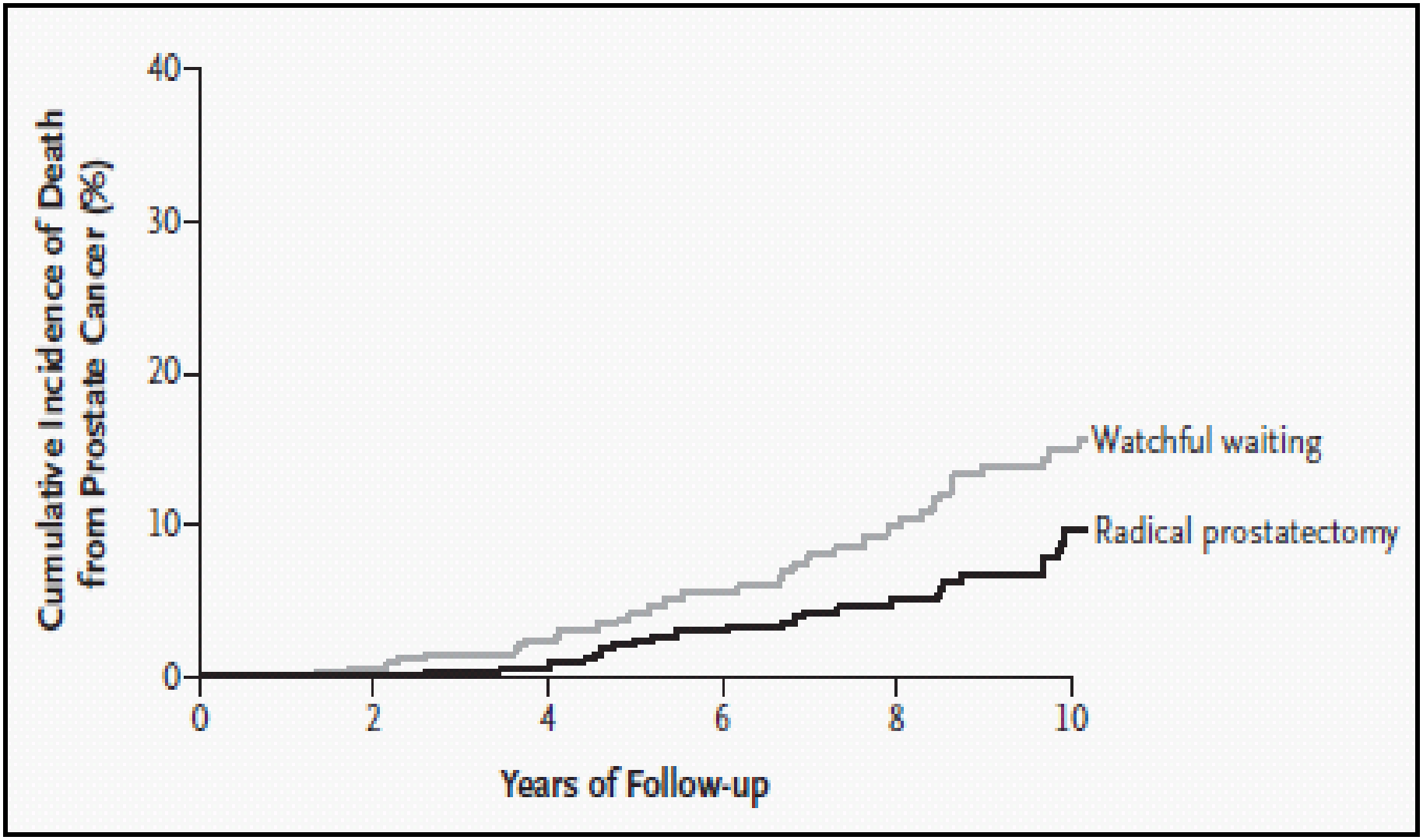


All malignant neoplasms - 80,541

Figure 1.4: Age standardised (European) incidence and mortality rates, prostate cancer, GB, 1975-2003

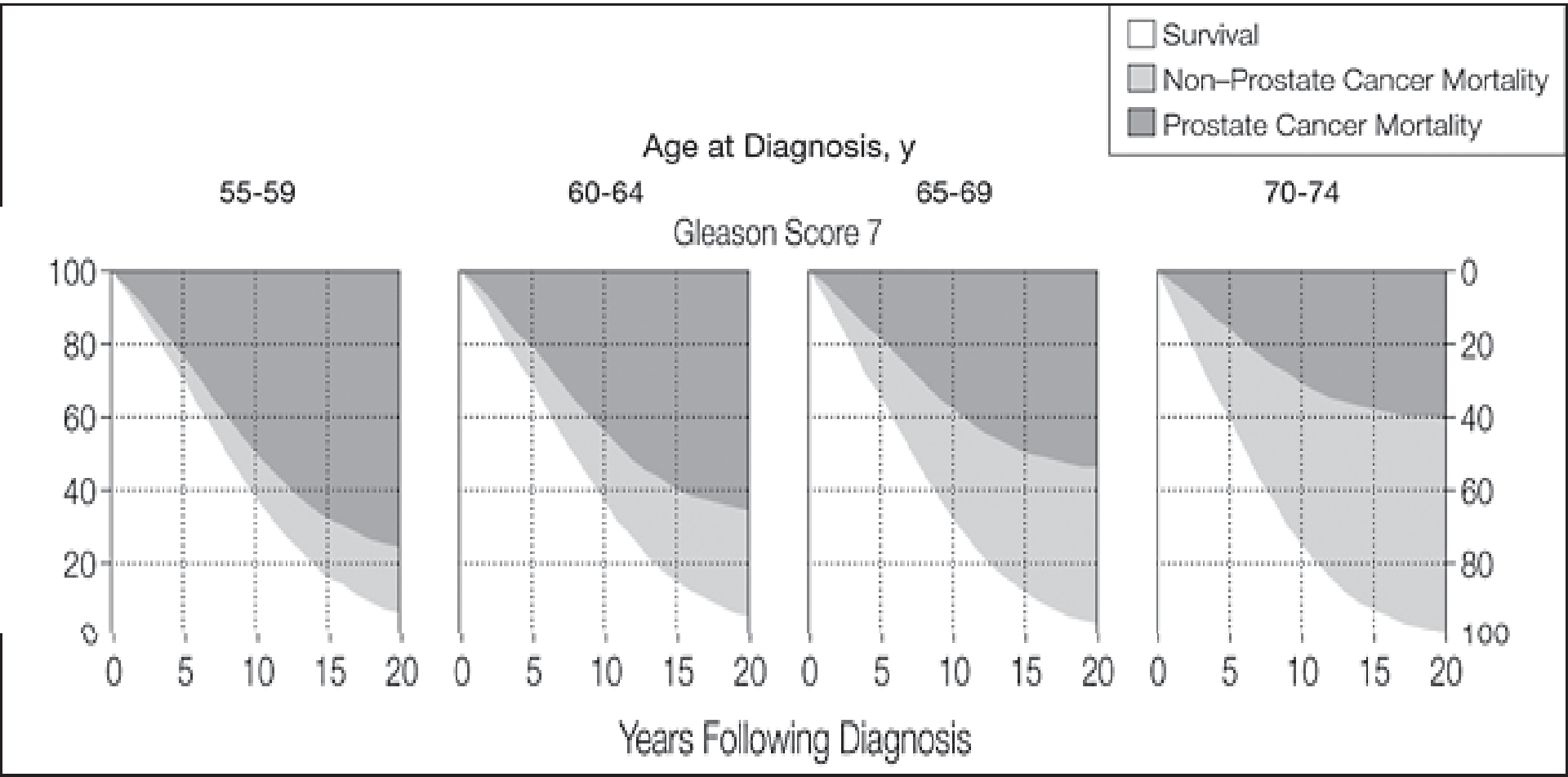


Can prostate cancer be cured?



Bill-Axelsen et al, NEJM 2005

When is treatment indicated?



How to treat?

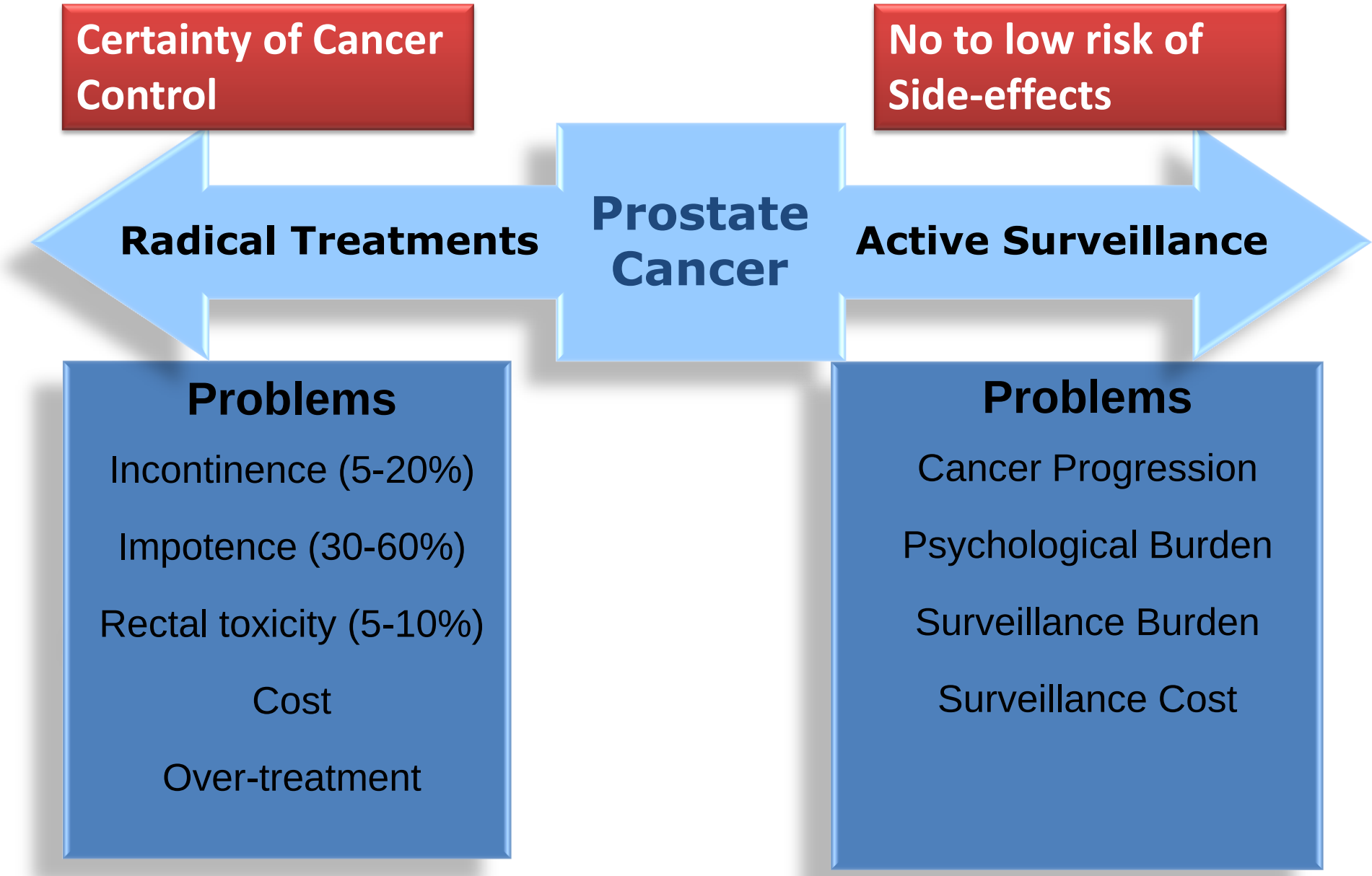
Nuke it

Cut it out

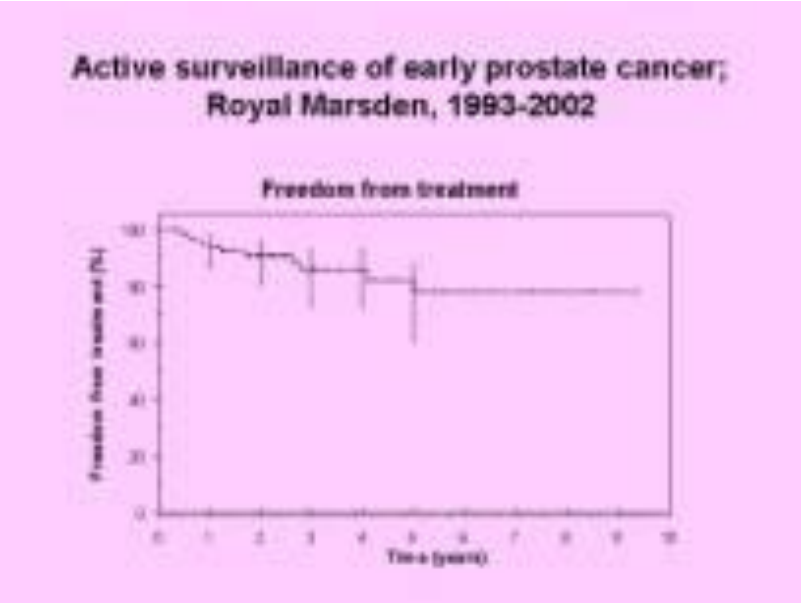
Freeze it

Cook it

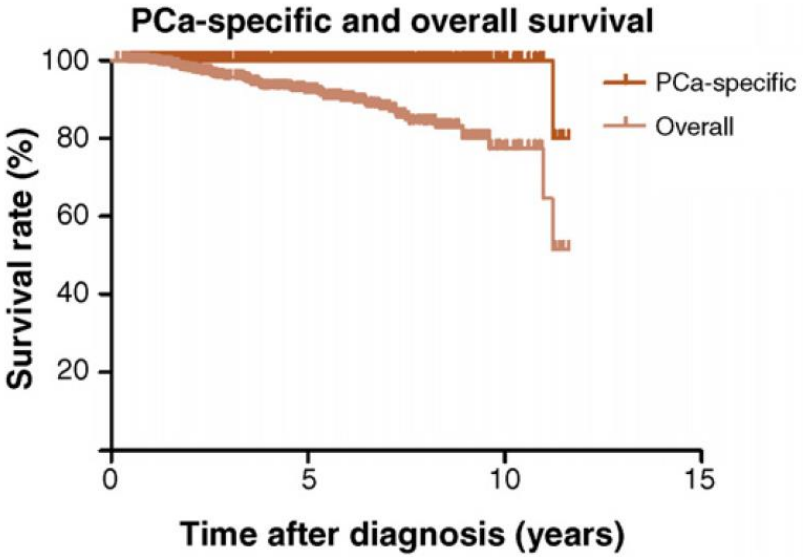
Options for localised prostate cancer



Active surveillance

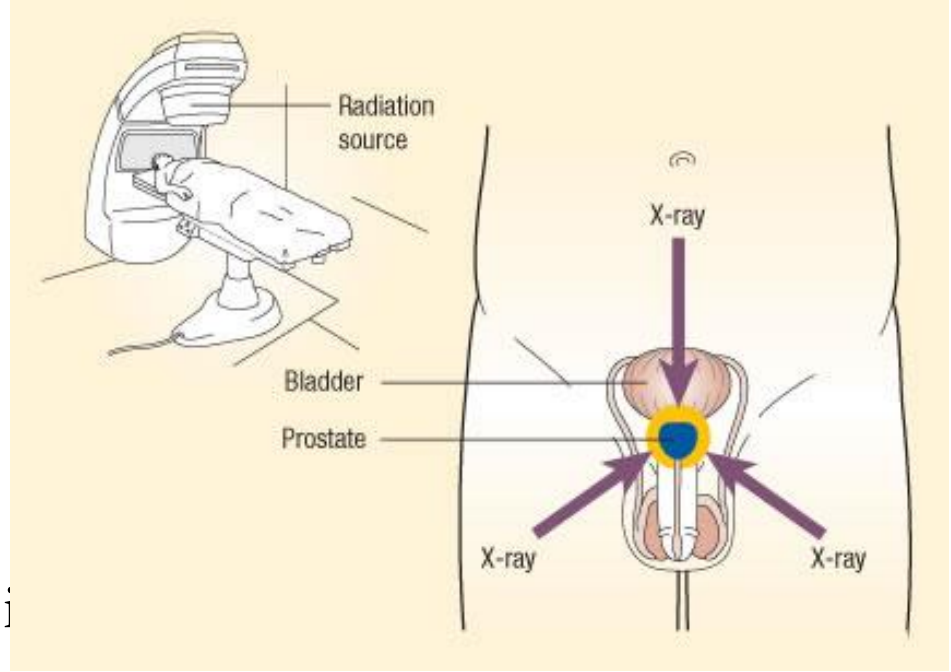


No side effects
Long term data
Acceptable
Deferred cure

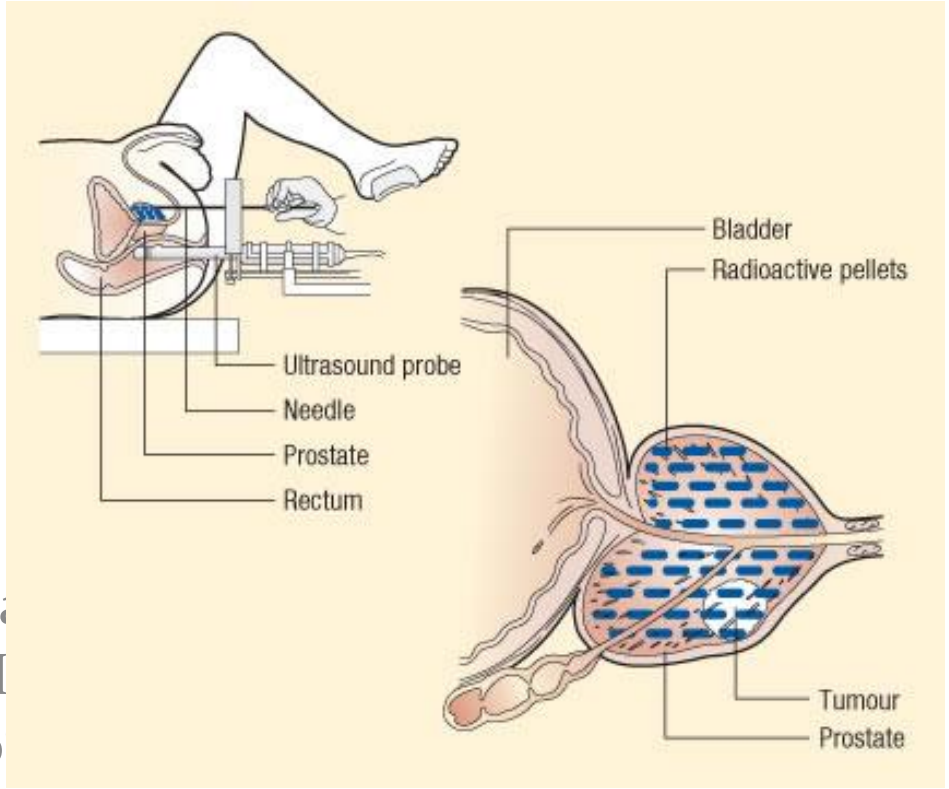


External Radiotherapy and hormone treatment

7 weeks – 35 sessions
Radiation effects
Hormone effects
3x increase of secondary cancers i
10 years



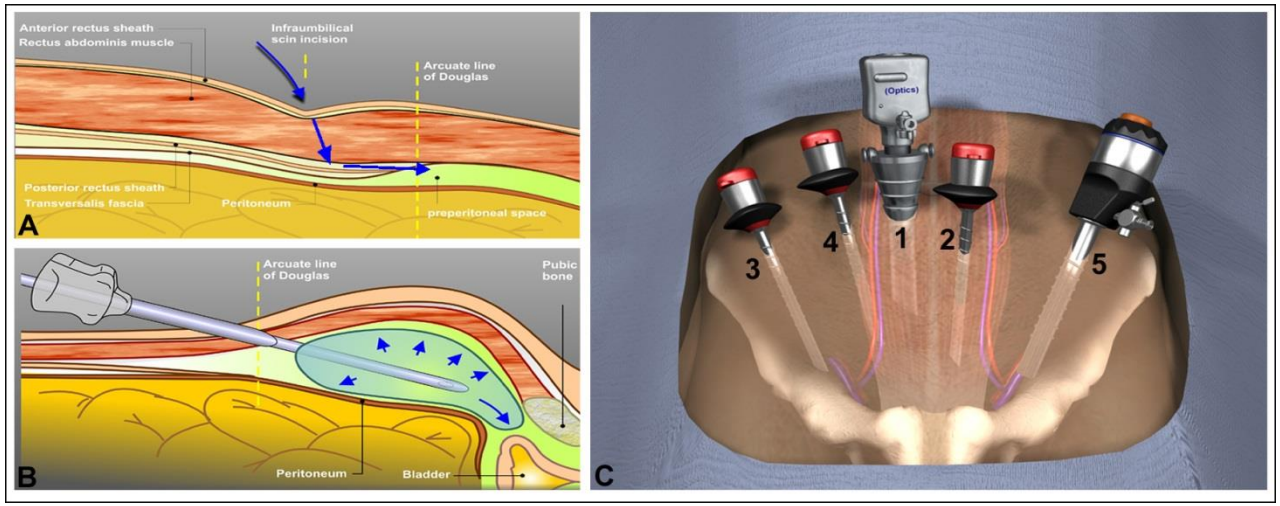
Radiotherapy – internal (LDR Brachytherapy)



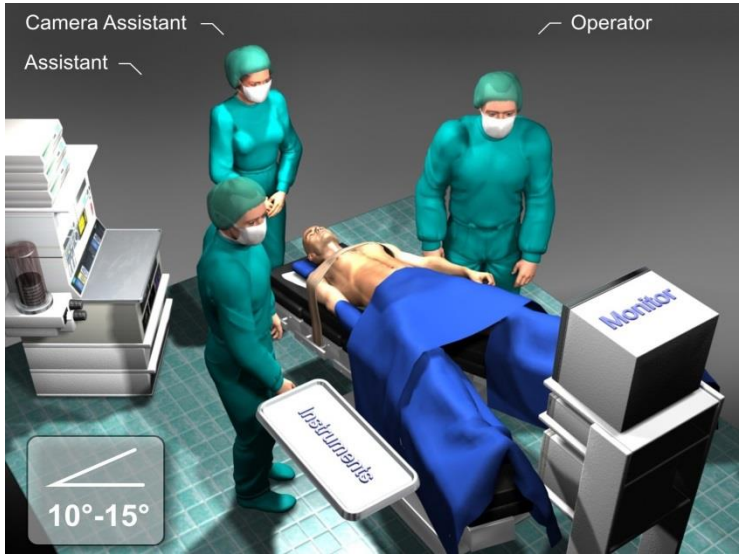
Ra
H
50

Outcome

Radical Prostatectomy – keyhole



< 24 hour stay
Cheap
Big bang approach
Reserved for the young and fit



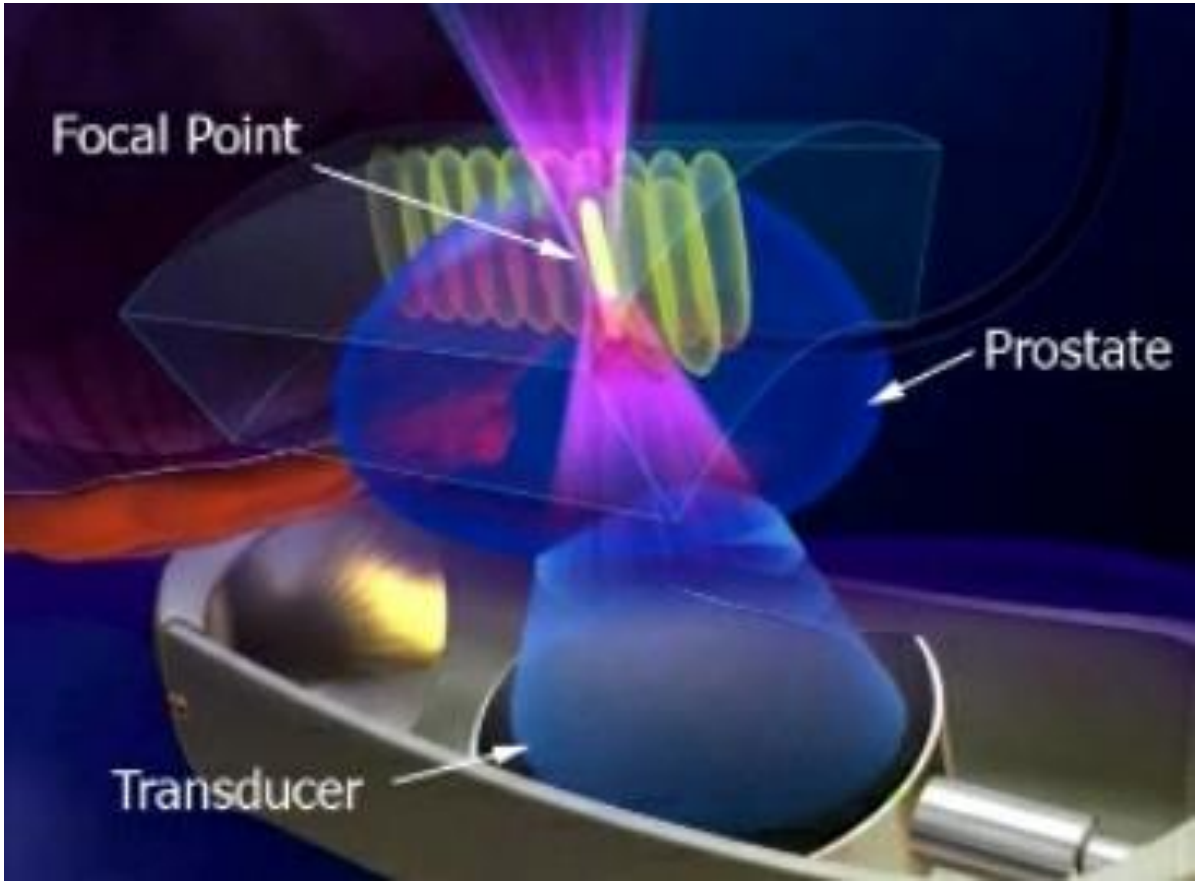
Collateral damage

- Surgical complications
- Nurse Hatchet or bad luc
- Incontinence
- Erectile dysfunction
- Infertility

New kids on the block

- HIFU (high intensity focused ultrasound)
- Cryotherapy

HIFU



HIFU

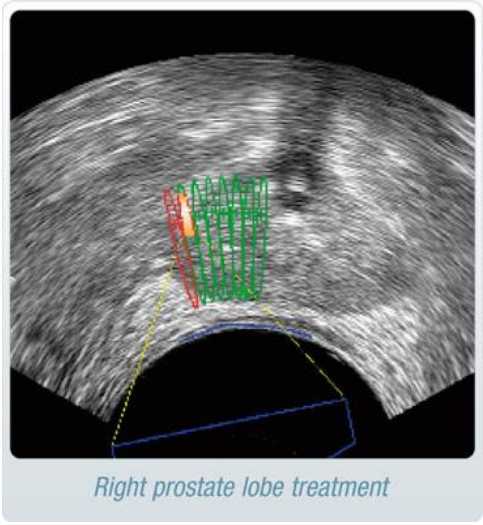
< 24 hour

Long term data lacking

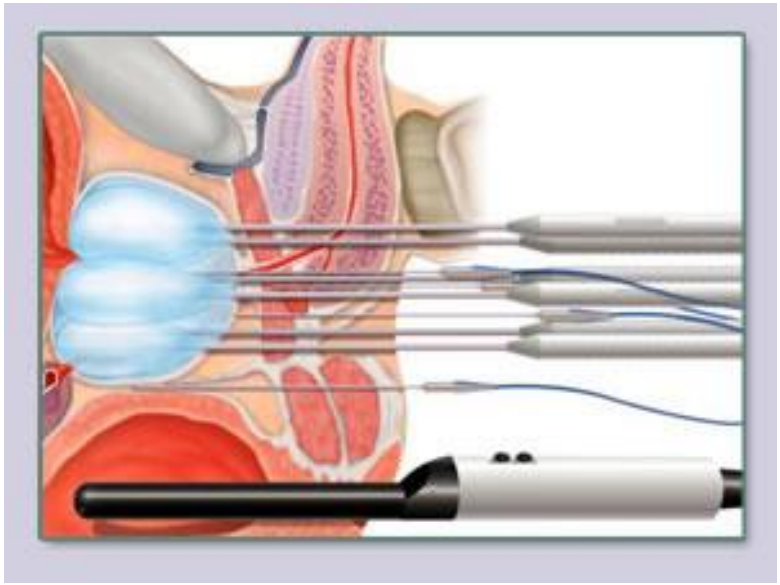
Side effects

Focal therapy ?

Investigational

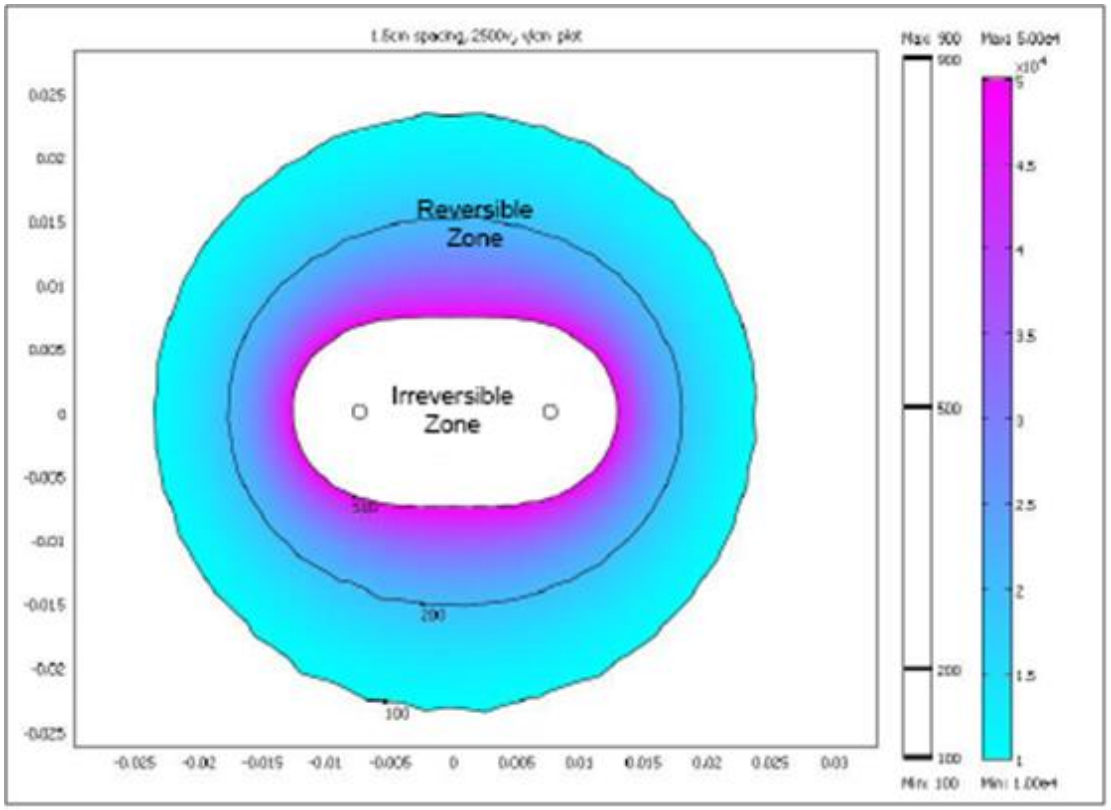


Cryotherapy



Side effects
Long term F/up
Salvage treatment for recurrent cancer
?focal therapy

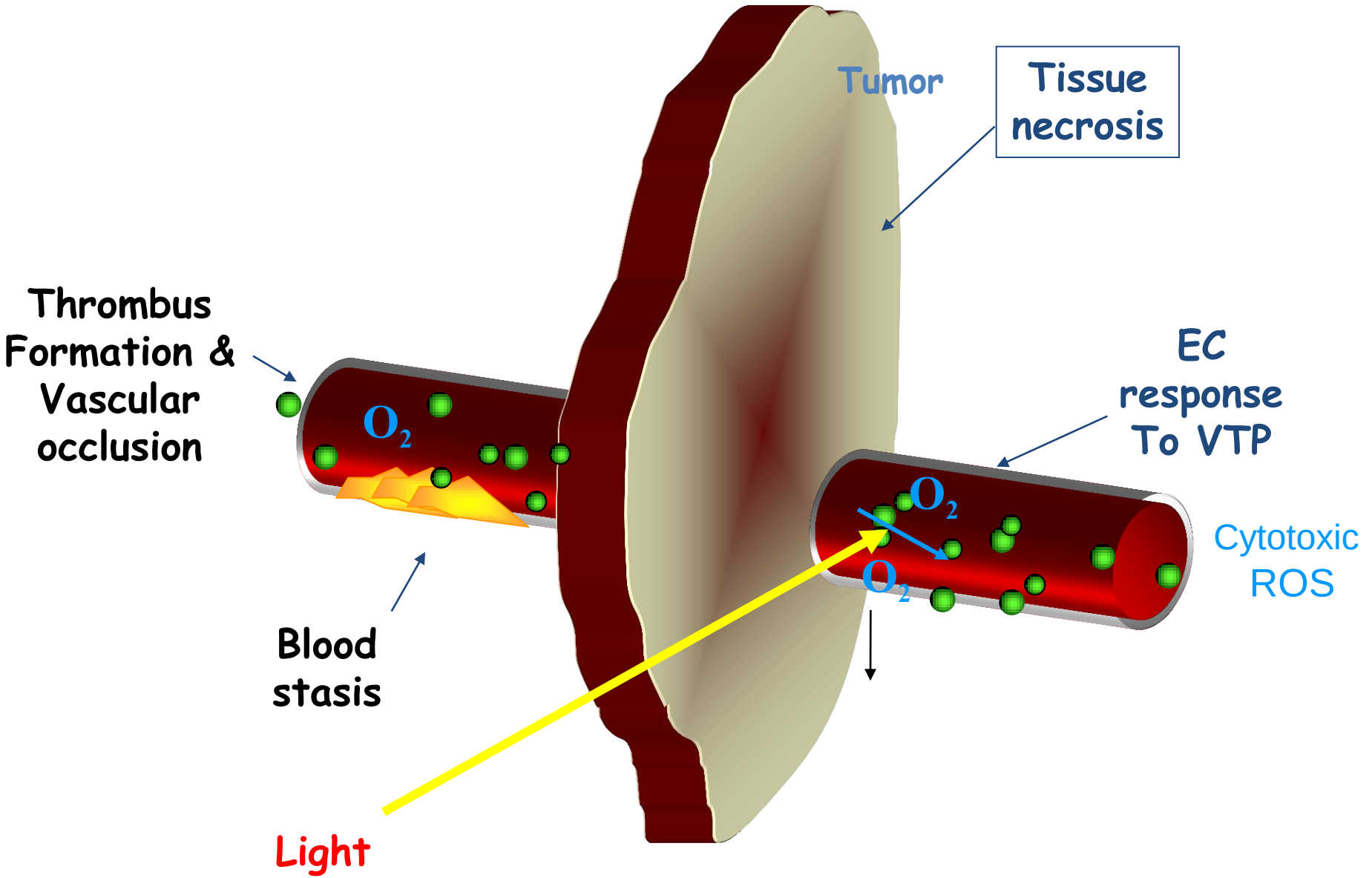
Irreversible Electroporation

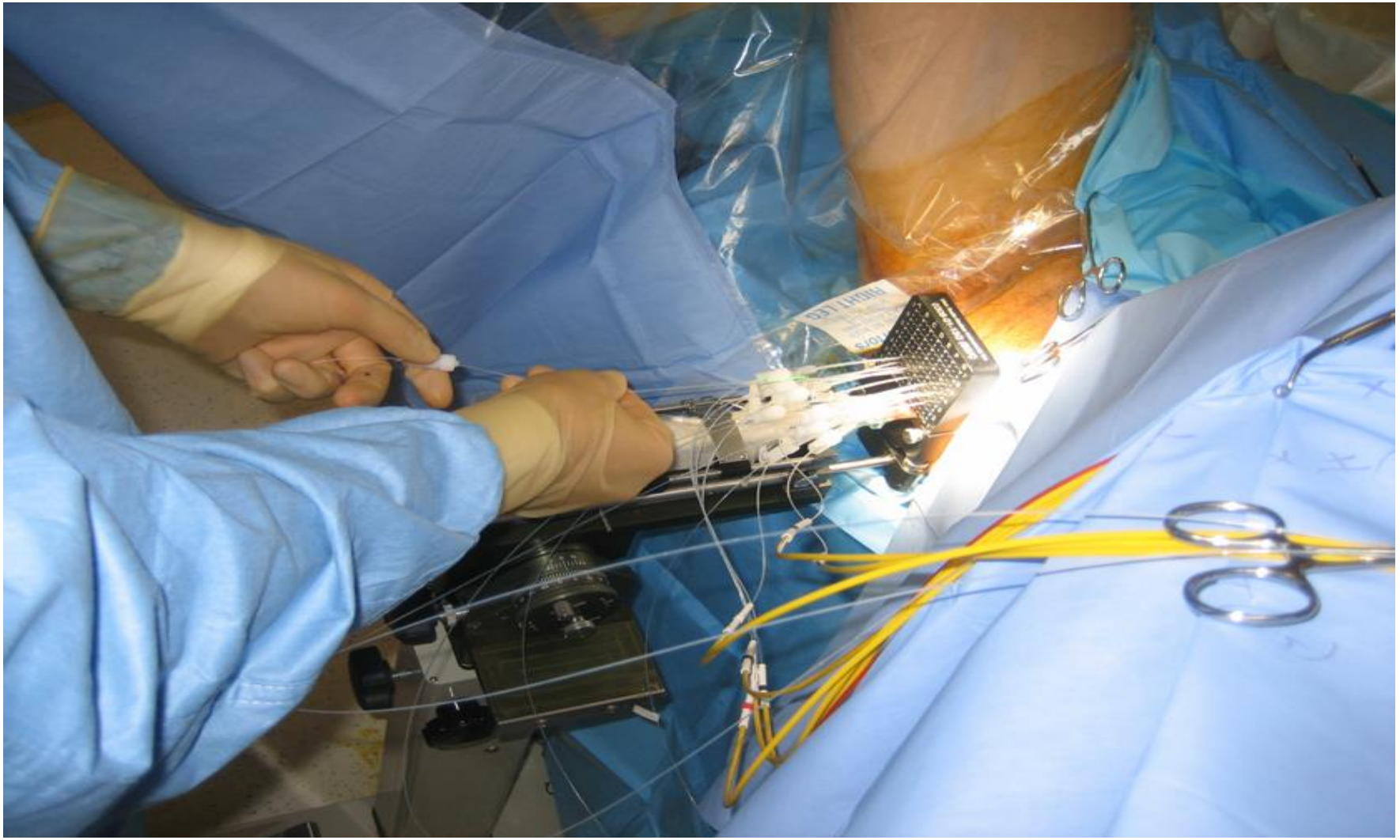


- Rapid series of short, electrical pulses.
- High voltage but low energy (non-thermal).
- Nano-sized defects (“pores”) created in cell membrane.
- Cell death occurs (mimics natural cell death).

Note: Entire white area is the IRE zone.

Vascular Targeted Photodynamic Therapy





WST-11 Vascular targeted photo-therapy study (Phase I / II)

Radiofrequency Ablation

Trod Medical

Questions?

Please support Movember.

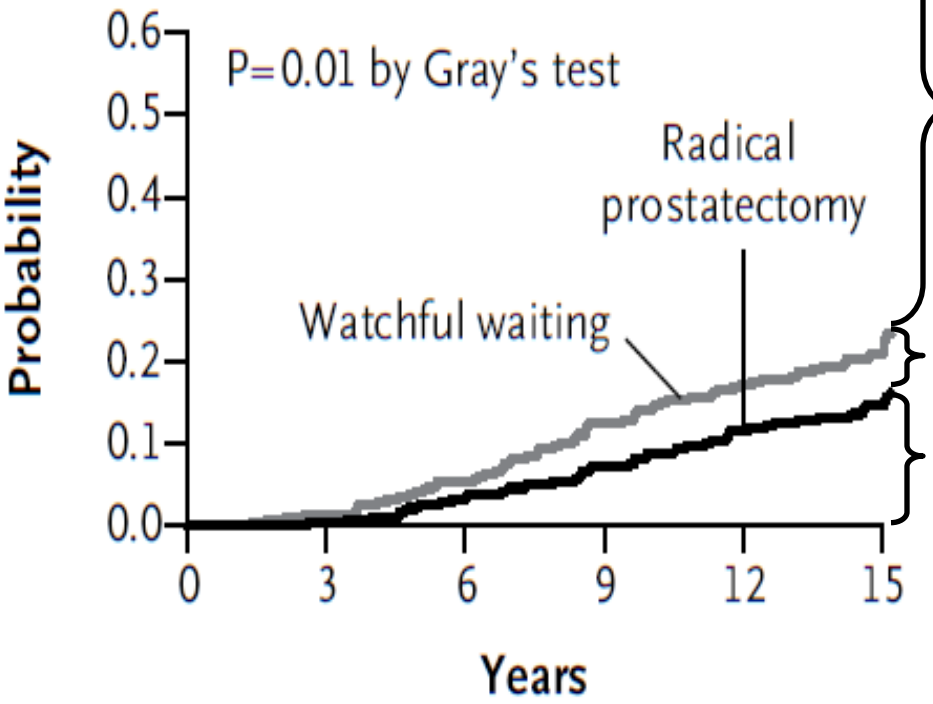
Overtreatment of Prostate Cancer

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Radical Prostatectomy versus Watchful Waiting in Early Prostate Cancer

B Death from Prostate Cancer, Total Cohort



No. at Risk

Radical prostatectomy	347	339	311	271	214	109
Watchful waiting	348	334	306	251	192	96

Natural history—proportion of men who could avoid therapy

Small proportion benefit from treatment

Men who die despite curative treatment

N

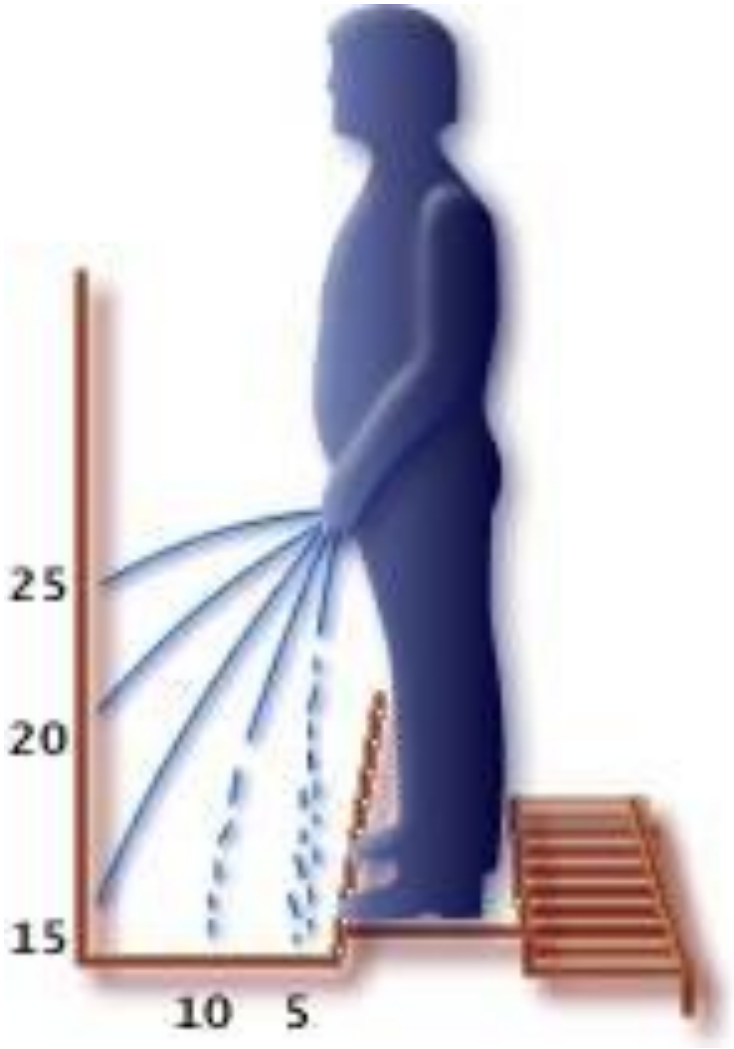
- lack of awareness of the health issues they face
- do not openly discuss their health and how they’re feeling
- are reluctant to take action when they don’t feel well
- engage in risky activities that threaten their health

Peeing at night

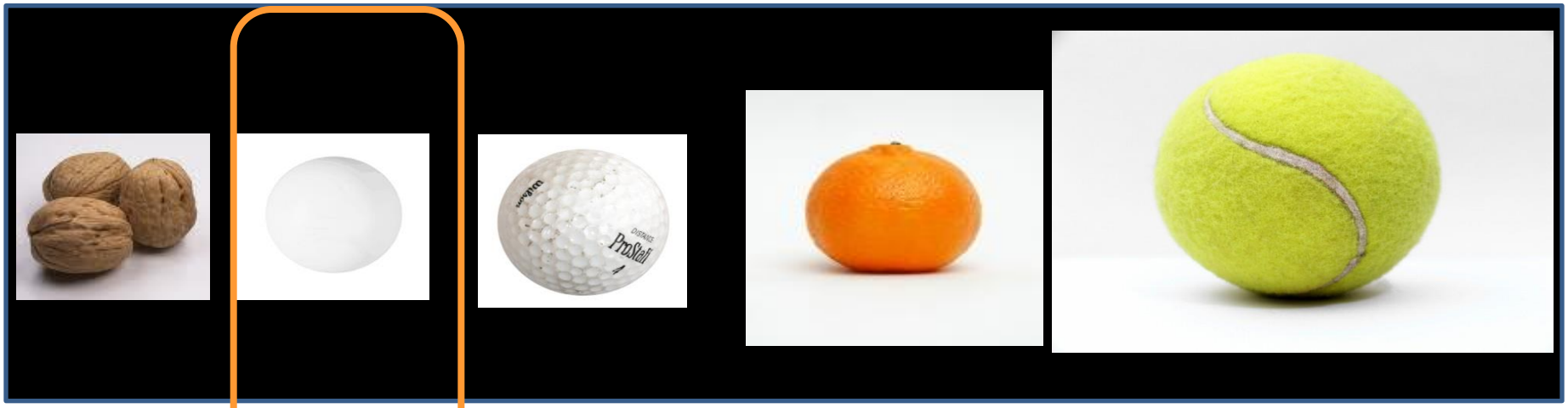
=

Falls

Symptoms



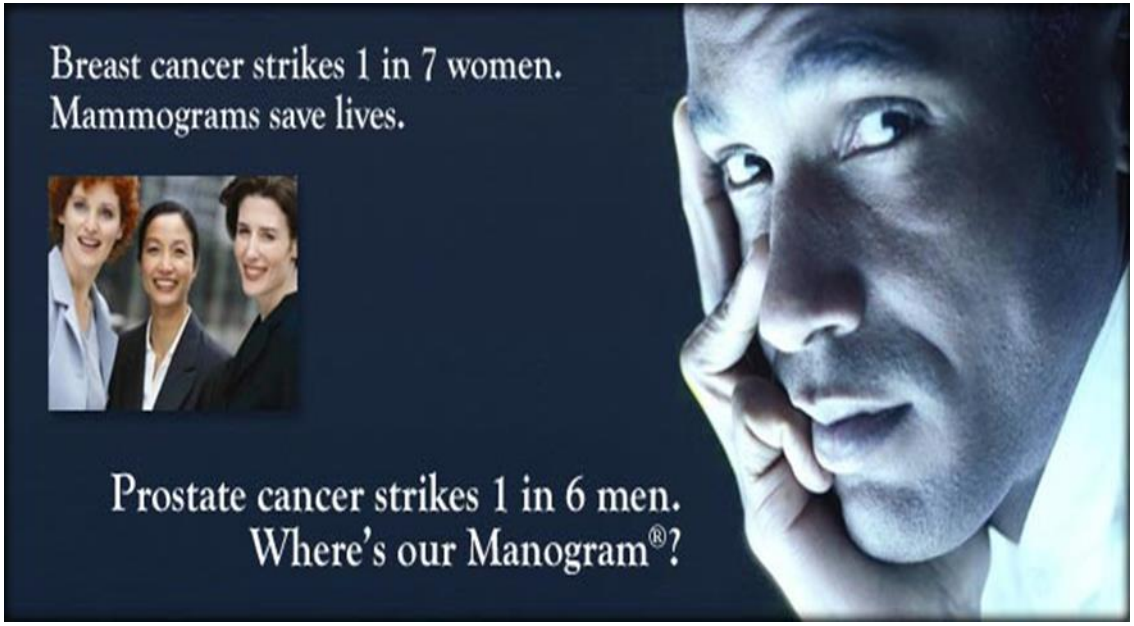
Some common comparisons to help assess prostate size



Walnut	Ping Pong Ball	Golf Ball	Clementine	Tennis Ball
3.2cm diameter	4cm diameter	4.3cm diameter	5cm diameter	6.3 diameter
Approx 20cc	Approx 33cc	Approx 40cc	Approx 65cc	Approx 130 cc

- A 30 cc prostate is approximately the size of a ping pong ball

Unmet needs in men's health



The www does not always help


MOVEMBER FOUNDATION


MOVEMBER
NAIL ART

Comprehensive Renal stone management
&
Treatment options in BPH

Ranan DasGupta
MA MD FRCS(Urol)
St Mary's and Charing Cross Hospitals

Renal Stone disease

Elective referrals: imaging of choice

Emergency referrals: analgesia of choice

Treatment options

Prevention

Elective

Incidental vs Symptomatic

Elective

Incidental vs Symptomatic

Loin pain/ micro haematuria

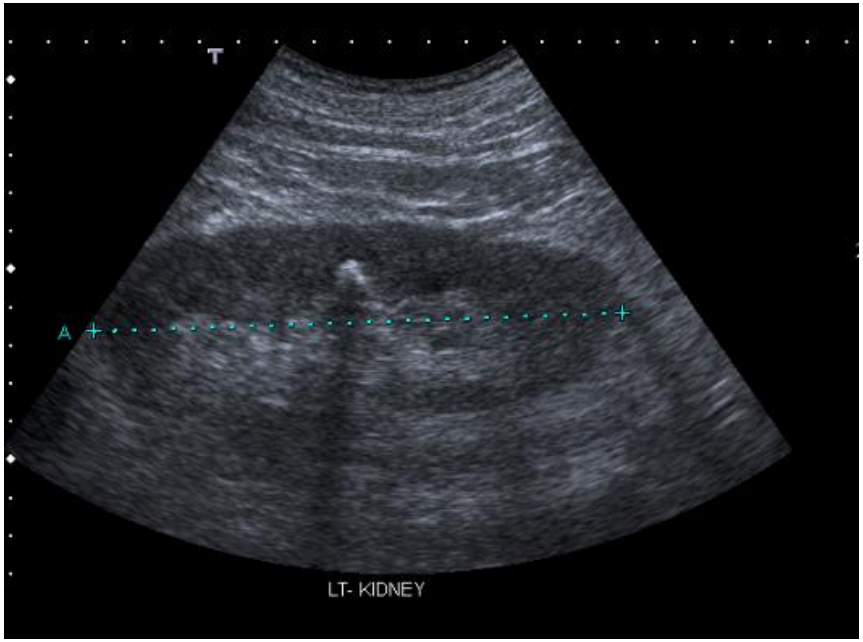
Recurrent UTIs

Imaging for other pathology

(Discharged from A&E)

Imaging

US



X-ray

CT

Advantages of CT

Immediate

Low dose protocol (<4mSv)

No contrast issues (cf IVU)

Less operator variability (cf US)

Most stones seen (cf KUB)

Info about other organs

Advantages of US

No radiation

Easier (and cheaper)

Portable

Can also diagnose hydronephrosis

Emergency

1) Analgesia

NSAID – diclofenac PR or IM

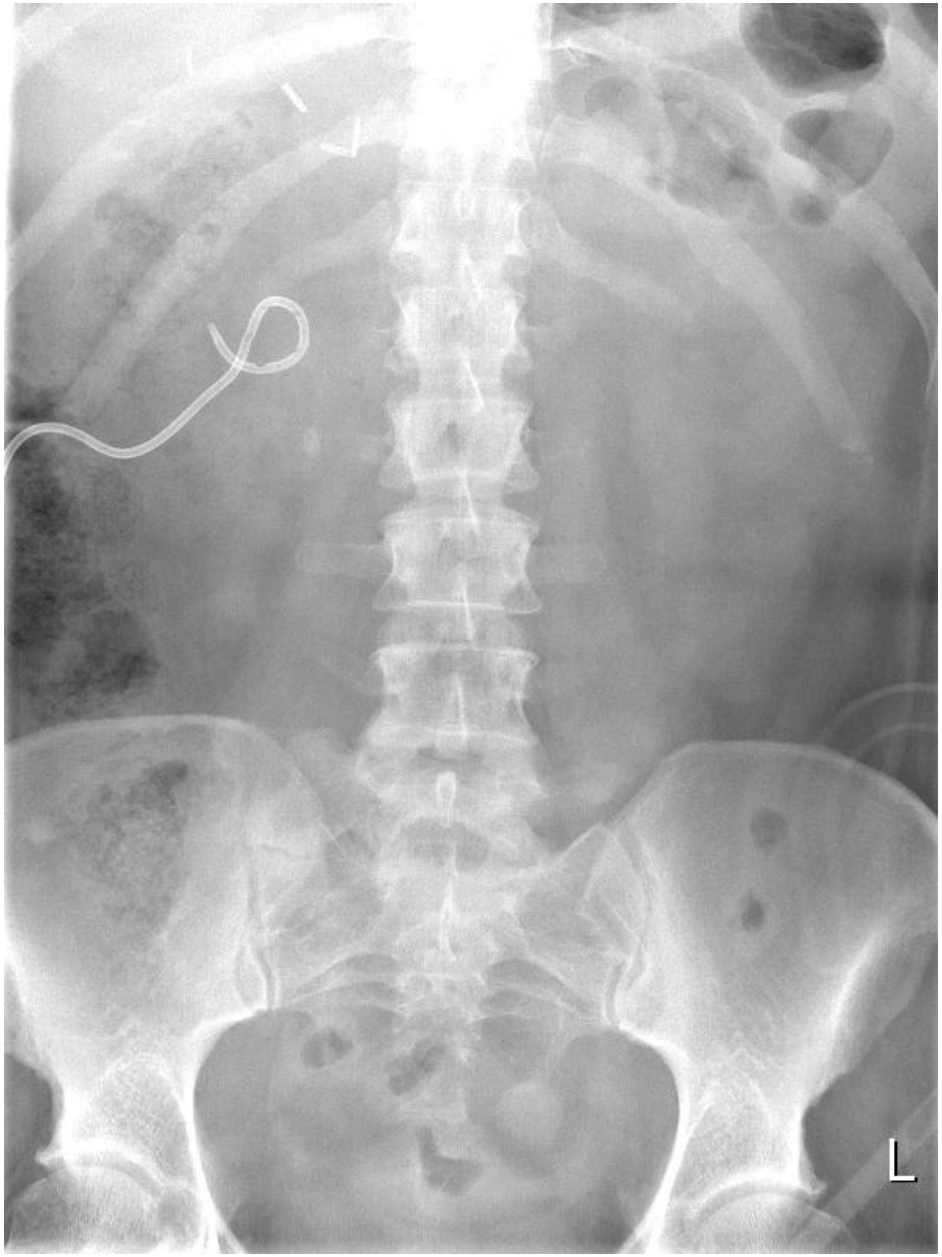
Opiates

With anti-emetic(s)

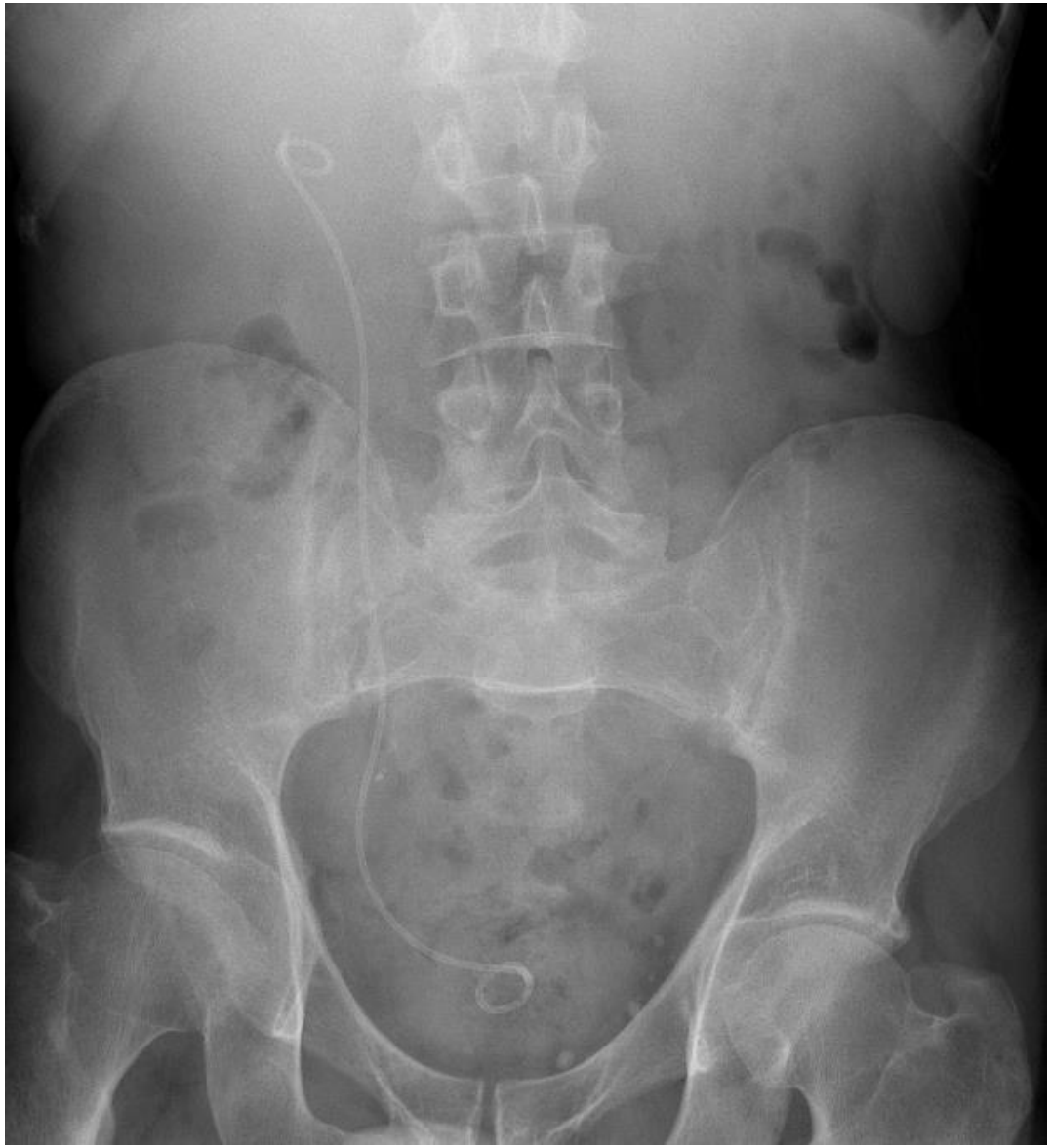
2) If pyrexial – needs urgent drainage

Nephrostomy vs Ureteric stent

Nephrostomy



Stent



Treatments

MET (Medical Expulsive therapy)
ESWL (Extracorporeal shockwave lithotripsy)
Laser (Ureteroscopy)
PCNL (Percutaneous Nephrolithtomy)

MET

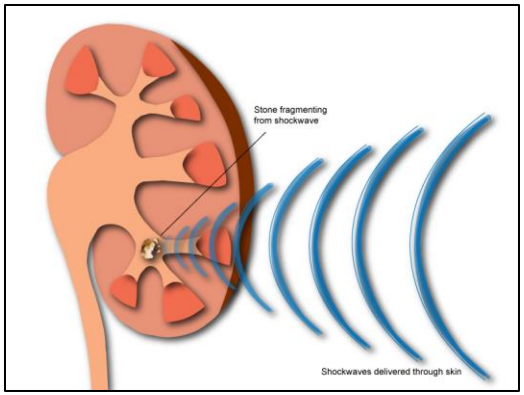
Tamsulosin 400mcg od
Safe, well tolerated; practised for >10 years

Recent controversy about efficacy:
Lancet July 2015; 386(9991):341-9

Medical expulsive therapy in adults with ureteric colic: a multicentre, randomised, placebo-controlled trial

Robert Pickard, Kathryn Starr, Graeme MacLennan, Thomas Lam, Ruth Thomas, Jennifer Burr, Gladys McPherson, Alison McDonald, Kenneth Anson, James N'Dow, Neil Burgess, Terry Clark, Mary Kilonzo, Katie Gillies, Kirsty Shearer, Charles Boachie, Sarah Cameron, John Norrie, Samuel McClinton

ESWL



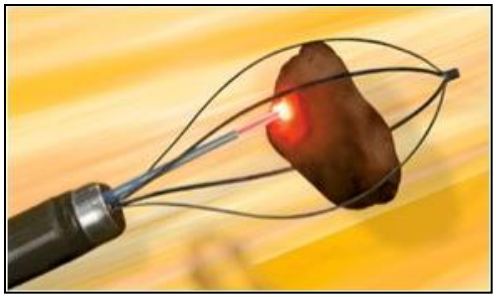
Non-invasive; no need for General Anaesthesia

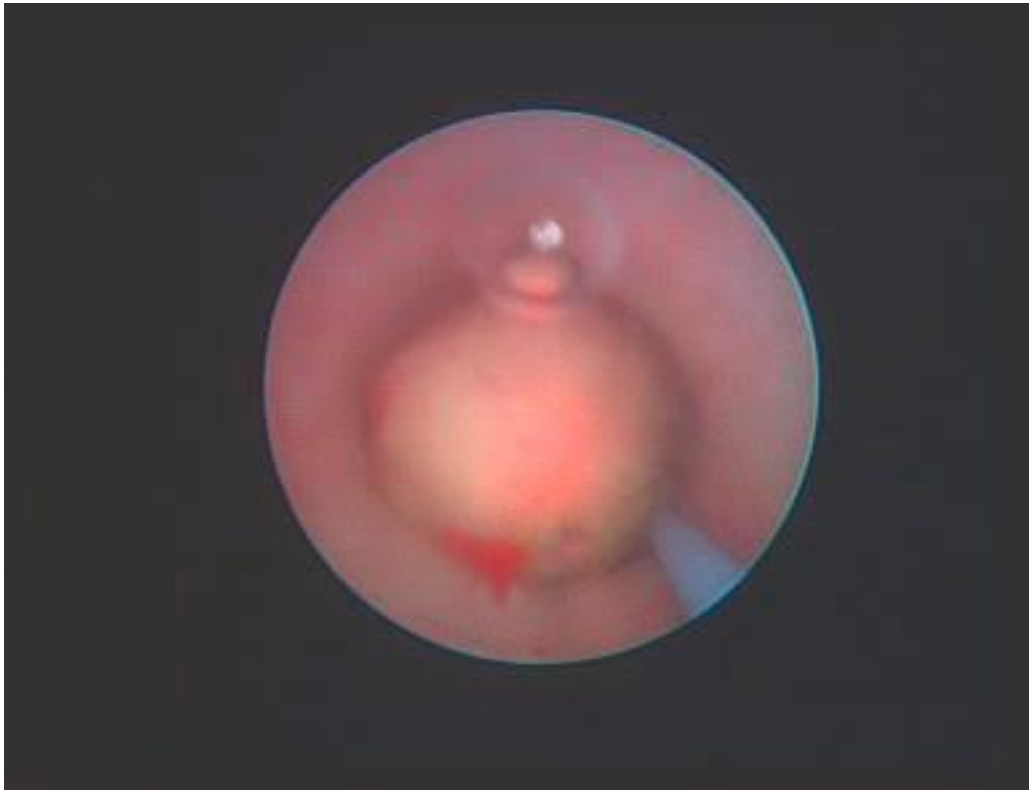
Fixed lithotriptor (Charing Cross) versus Mobile 'Emergency ESWL' (Dasgupta R et al Curr Opin Urol 2009; 19: 196-199

Ureteroscopy/Laser

Ureteric stone – rigid URS

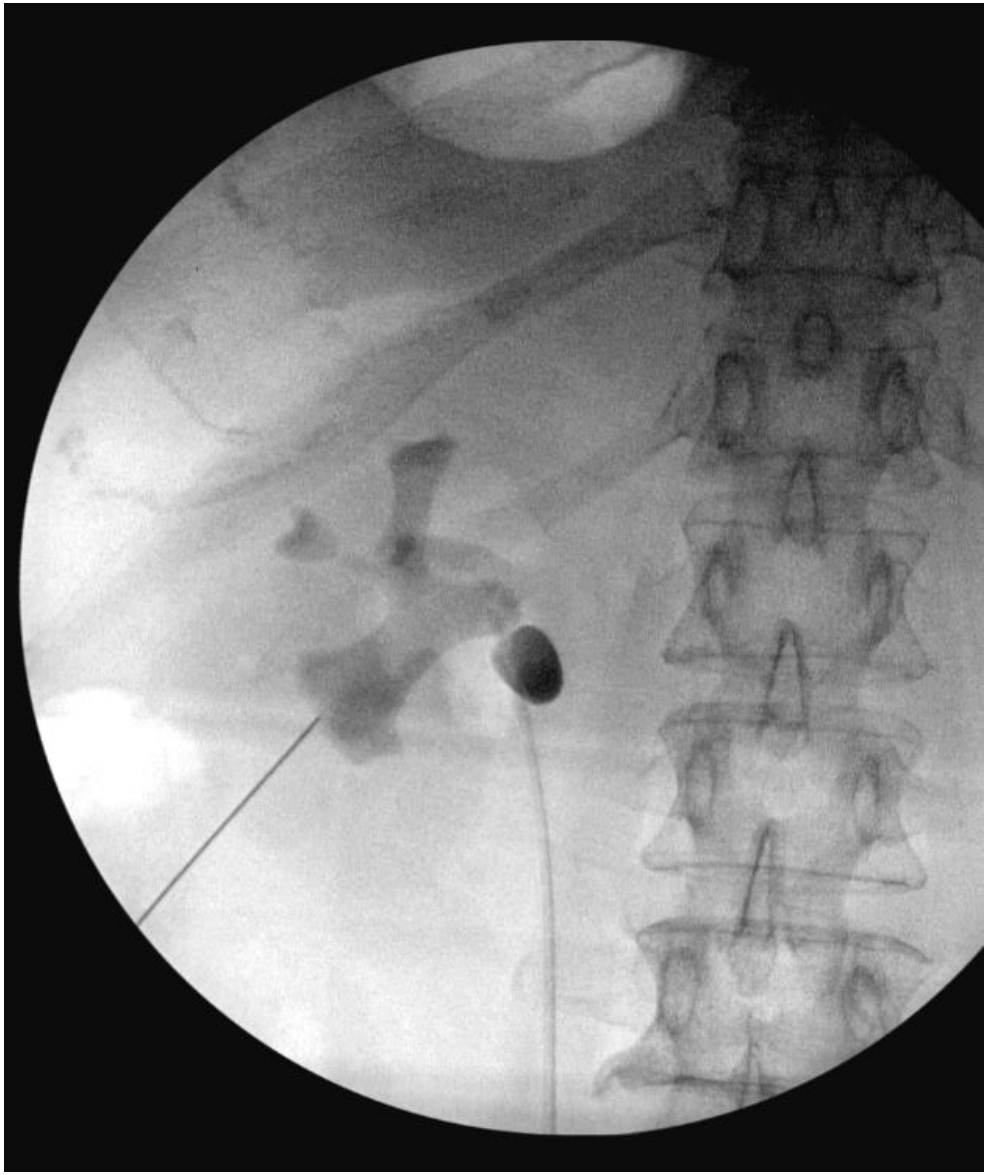
Renal stone – flexible URS

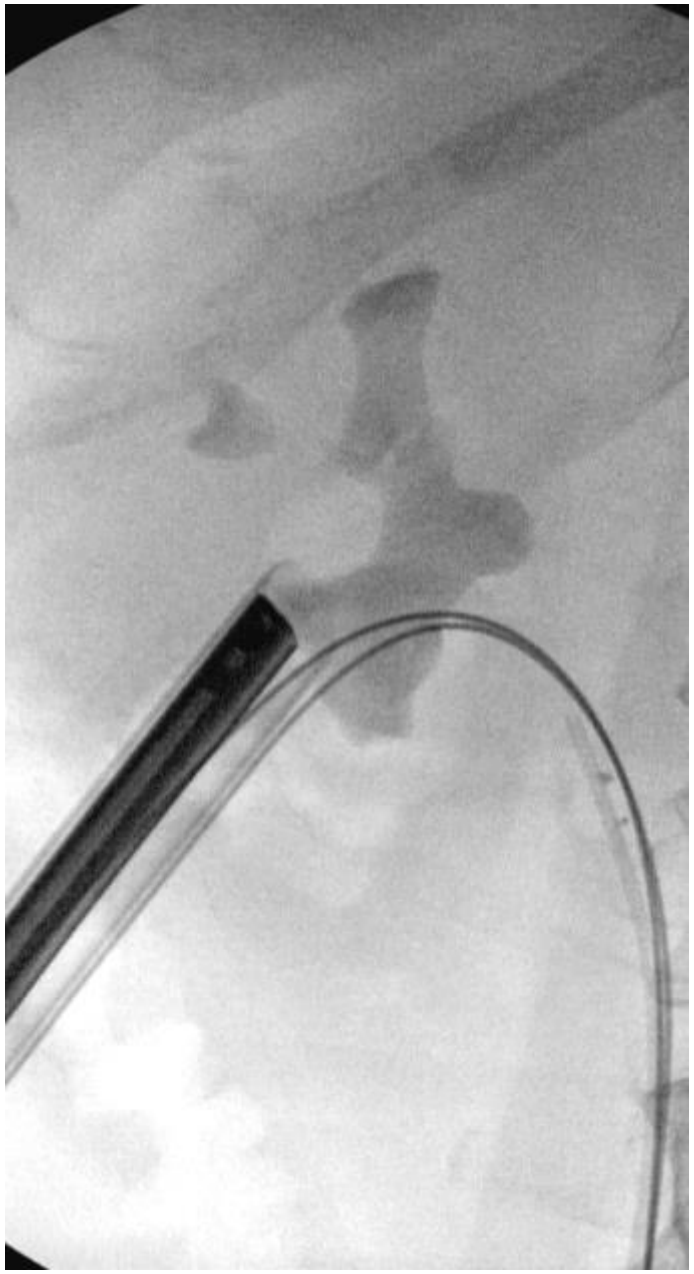


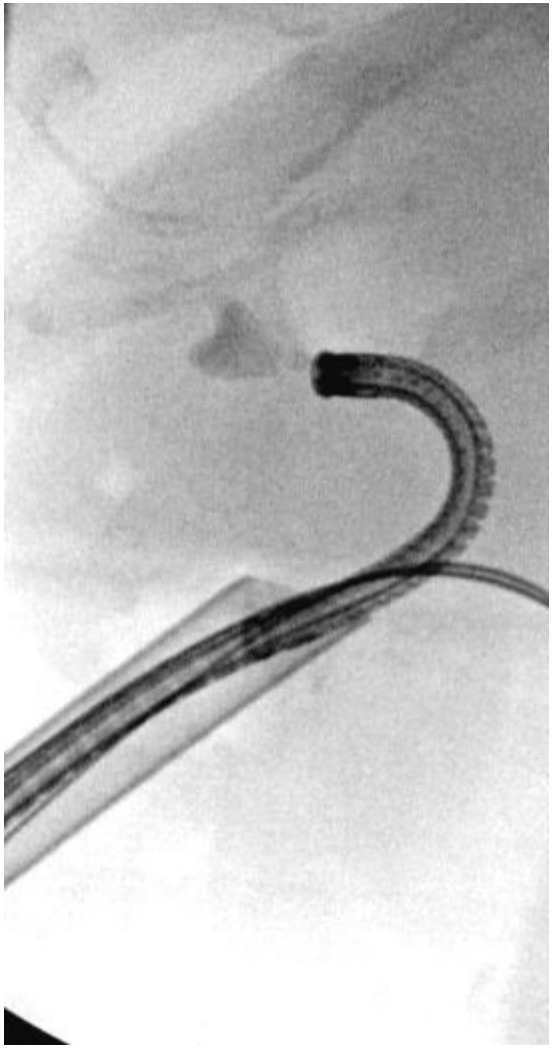


PCNL

Staghorn calculi
Hard stones
Stones in calyceal diverticula
Mini-PCNL vs UltraMini PCNL vs Micro PCNL







Prevention

1) Hydration

Water…..water…….water……

Borghi L et al J Urol 1996 155: 839-843
Urinary volume, water and recurrences in idiopathic calcium nephrolithiasis: a 5 year randomized prospective study

2) Dietary modification

Calcium <u>is</u> needed in balanced diet

Curhan GC et al NEJM 1993; 328: 833-838
A prospective study of dietary calcium and other nutrients and the risk of symptomatic kidney stones

Citric fruit intake should be increased

2) Dietary modification

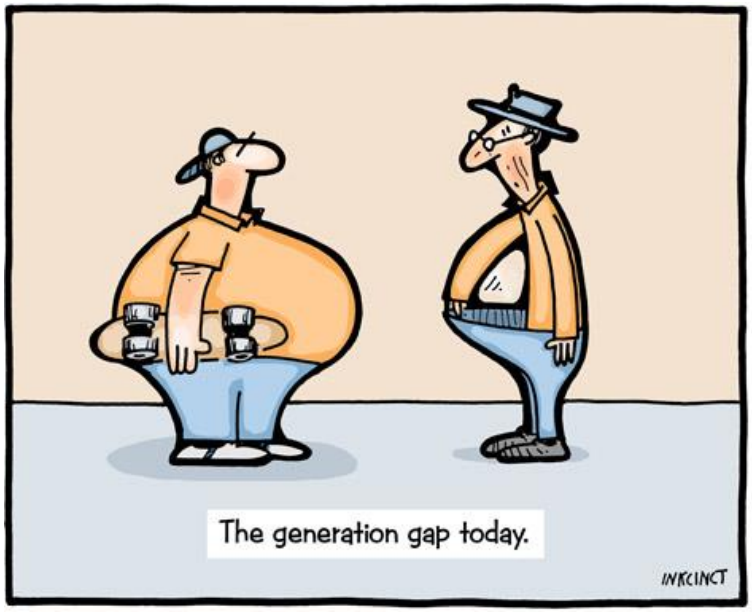
Oxalate can be reduced by restricting intake of certain foodstuffs

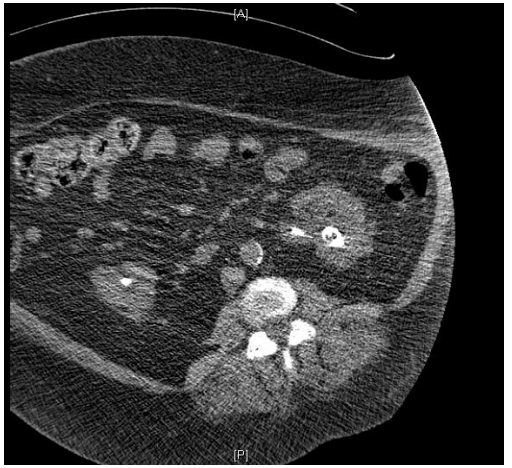



http://www.pkdiet.com/pdf/LowOxalateDiet.pdf

Uric acid precursors can be reduced


Obesity & Stones





Imperial College London

Imperial College Healthcare NHS Trust

Does type of bariatric surgery affect development of renal stones?

Andrew Deykrith[1], Dominic Blunt[2], Ahmed Ahmed[3] & Ranan DasGupta[1]

[1]Dept of Urology; [2]Dept of Radiology, [3]Dept of GI Surgery, Imperial College Healthcare NHS Trust, London, UK

Introduction

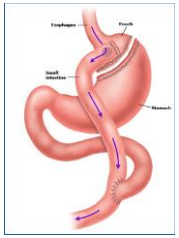
The widespread increase in obesity has seen a concomitant rise in the number of bariatric surgical procedures. The different types of operation include gastric bypass, gastric band and sleeve gastrectomy. It has been speculated that certain types of procedure may predispose to different effects on metabolism, and thus the propensity to stone formation. There have been a few selected prospective metabolic studies in this patient population, without any definitive conclusion. The availability of CT imaging allows an accurate and sensitive mode of determining stone development following such surgery.

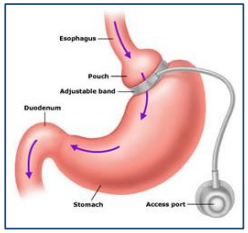
Aims & Objectives

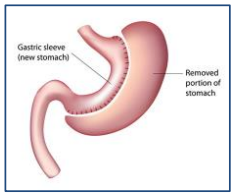
We reviewed our experience in a national referral bariatric centre, with CT before and after surgery to determine stone development rates with different surgical procedures.

Materials & Methods

This was a retrospective study of the database of a single surgeon (AA) for all types of bariatric procedure: sleeve gastrectomy, gastric bypass or gastric band – between 2007 and 2011. We reviewed the CT imaging (pre and post treatment) with an experienced radiologist (DB) to determine the extent and incidence of renal tract stones, associated with particular types of operation.







Results

Of a total of 111 patients, 68 underwent gastric bypass, 15 lap gastric banding, and 28 sleeve gastrectomy, with a mean age of 46.9 years (range 19-70 years). Of the gastric bypass group, 10 had renal stones diagnosed on CT (5 of which developed after surgery); 1 patient who underwent banding had a new stone following surgery; 6 patients undergoing sleeve gastrectomy had stones (4 developed after surgery). Only 2 patients required intervention, both for ureteric stones. The range of stone size was 4-8mm. No patients underwent percutaneous surgery or extracorporeal lithotripsy, with most passing stones spontaneously.

Conclusions

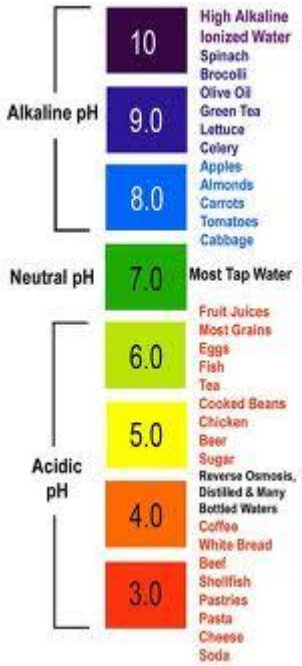
The incidence of new stones (9%) in the post-bariatric surgery population is similar to the population at large. One may speculate whether the incidence was higher for the sleeve gastrectomy group (14%) than the bypass (7.3%) or the banding (6.7%) groups due to a metabolic disturbance (with gastrectomy) rather than just the potentially higher urinary concentration (calcium, oxalate, etc) due to smaller reservoir volume.

3) Alkalinisation therapy

Keep urinary pH>7

Sodium bicarbonate 850mg tds

Potassium citrate 10mls tds



4) Medication

Allopurinol – for uric acid stones

Thiazide diuretics (Bendrofluazide; indapamide) – calcium stones

Chelating agents (tiopronin, d-penicillamine) – cystine stones

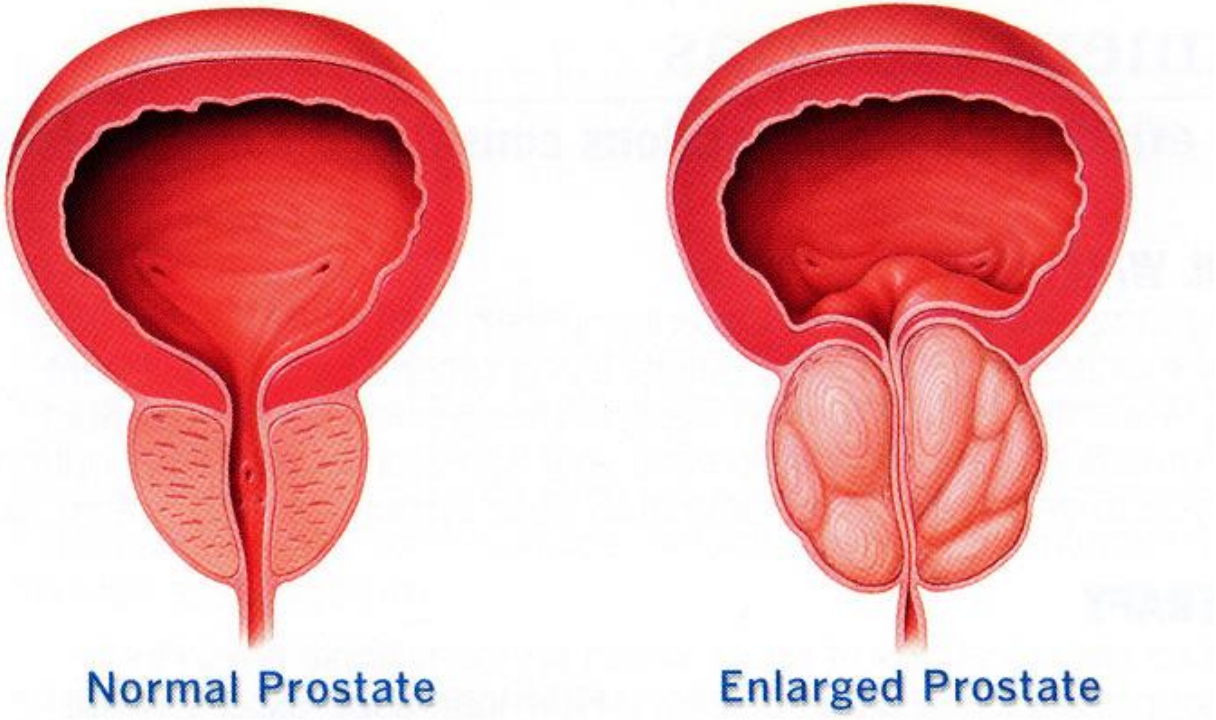
Treatment options in BPH

Medical therapy

Surgical therapy

New alternatives

Medical therapy



Medical therapy

5 Alpha-reductase inhibitors

Finasteride 5mg od
Dutasteride 0.5mg od

Medical therapy

Alpha-blockers

Tamsulosin 400mcg od
(eg Flomax, Contiflo, Omnic)

Alfusozin 10mg od
(eg Xatral XL)

Medical therapy

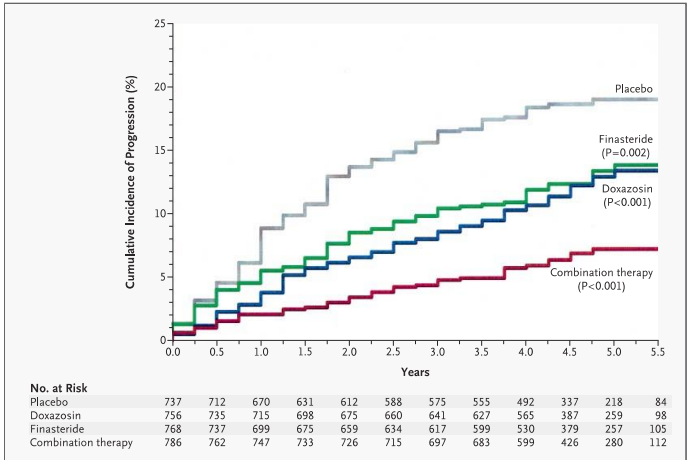
Combination therapy

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 DECEMBER 18, 2003 VOL. 349 NO. 25

The Long-Term Effect of Doxazosin, Finasteride, and Combination Therapy on the Clinical Progression of Benign Prostatic Hyperplasia

John D. McConnell, M.D., Claus G. Roehrborn, M.D., Oliver M. Bautista, Ph.D., Gerald L. Andriole, Jr., M.D., Christopher M. Dixon, M.D., John W. Kusek, Ph.D., Herbert Lepor, M.D., Kevin T. McVary, M.D., Leroy M. Nyberg, Jr., M.D., Ph.D., Harry S. Clarke, M.D., Ph.D., E. David Crawford, M.D., Ananias Diokno, M.D., John P. Foley, M.D., Harris E. Foster, M.D., Stephen C. Jacobs, M.D., Steven A. Kaplan, M.D., Karl J. Kreder, M.D., Michael M. Lieber, M.D., M. Scott Lucia, M.D., Gary J. Miller, M.D., Ph.D.,* Mani Menon, M.D., Douglas F. Milam, M.D., Joe W. Ramsdell, M.D., Noah S. Schenkman, M.D., Kevin M. Slawin, M.D., and Joseph A. Smith, M.D., for the Medical Therapy of Prostatic Symptoms (MTOPS) Research Group†



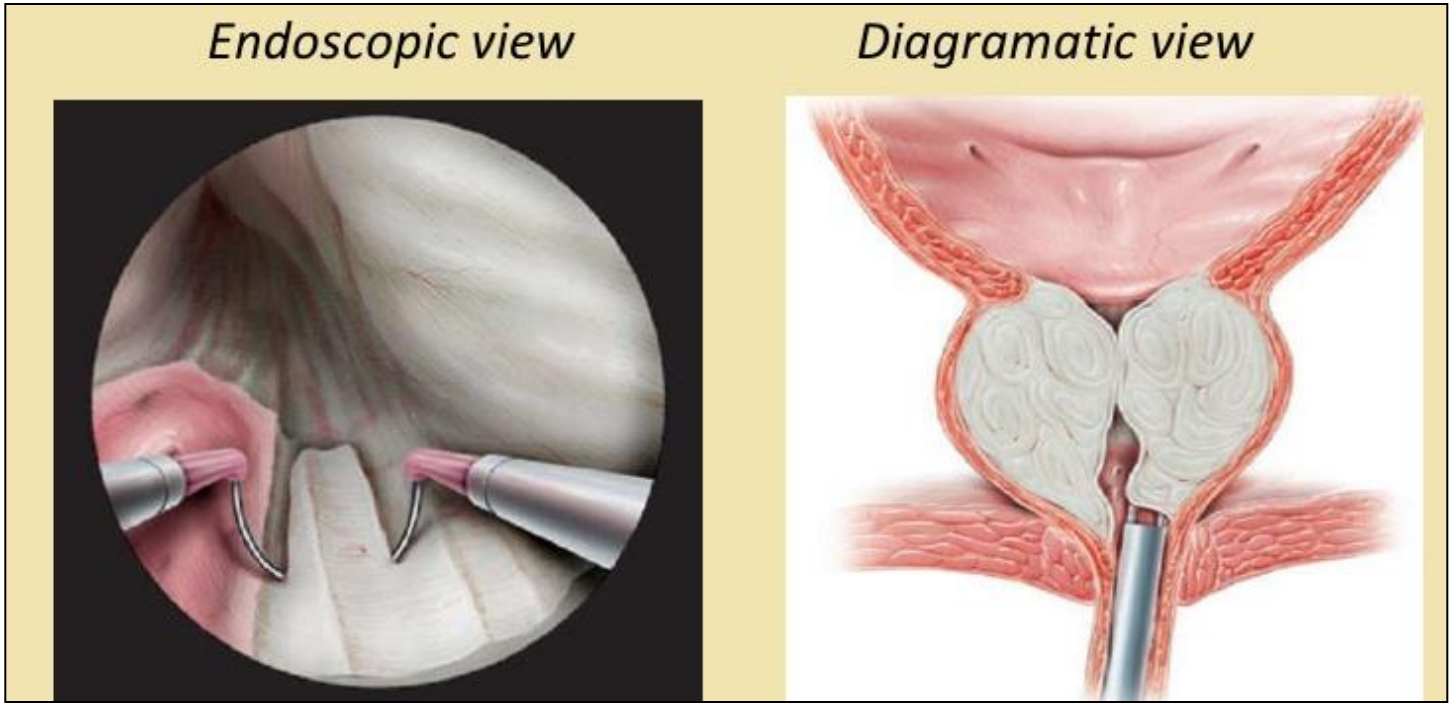
No. at Risk												
Placebo	737	712	670	631	612	588	575	555	492	337	218	84
Doxazosin	756	735	715	698	675	660	641	627	565	387	259	98
Finasteride	768	737	699	675	659	634	617	599	530	379	257	105
Combination therapy	786	762	747	733	726	715	697	683	599	426	280	112

Figure 1. Cumulative Incidence of Progression of Benign Prostatic Hyperplasia.
Progression was defined by an increase of at least 4 points over base line in the American Urological Association symptom score, acute urinary retention, urinary incontinence, renal insufficiency, or recurrent urinary tract infection. P values are for the comparison with placebo.

Surgical therapy

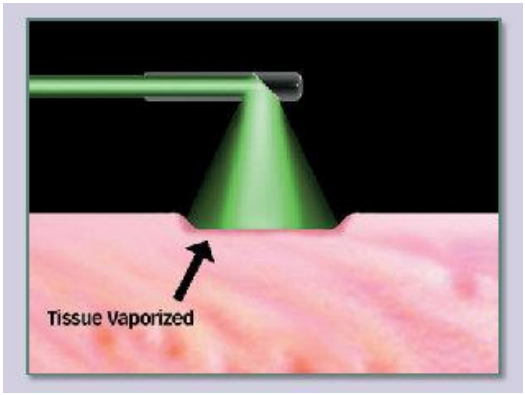
Surgical therapy

TURP/ Bipolar TURP



Surgical therapy

KTP/ Greenlight®



Surgical therapy

Holmium Laser Enucleation of Prostate

Surgical therapy

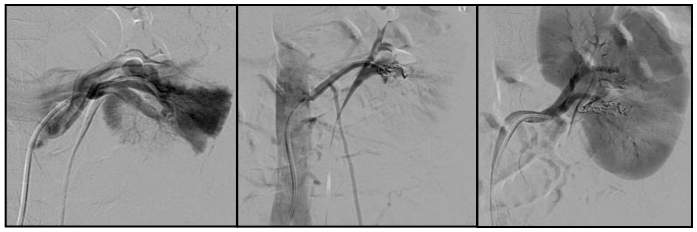
Open prostatectomy

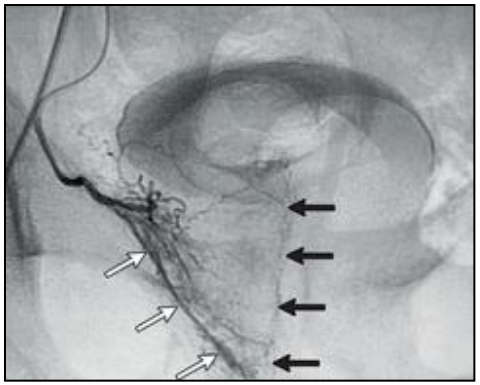
Millin's prostatectomy
Freyer's prostatectomy

New alternatives

New alternatives

Prostatic Artery Embolization





New alternatives

Prostatic Artery Embolization

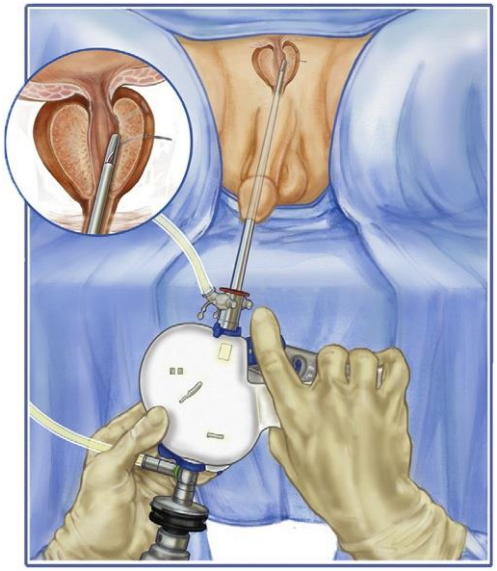
NICE guideline: should be part of UK registry (ROPE)

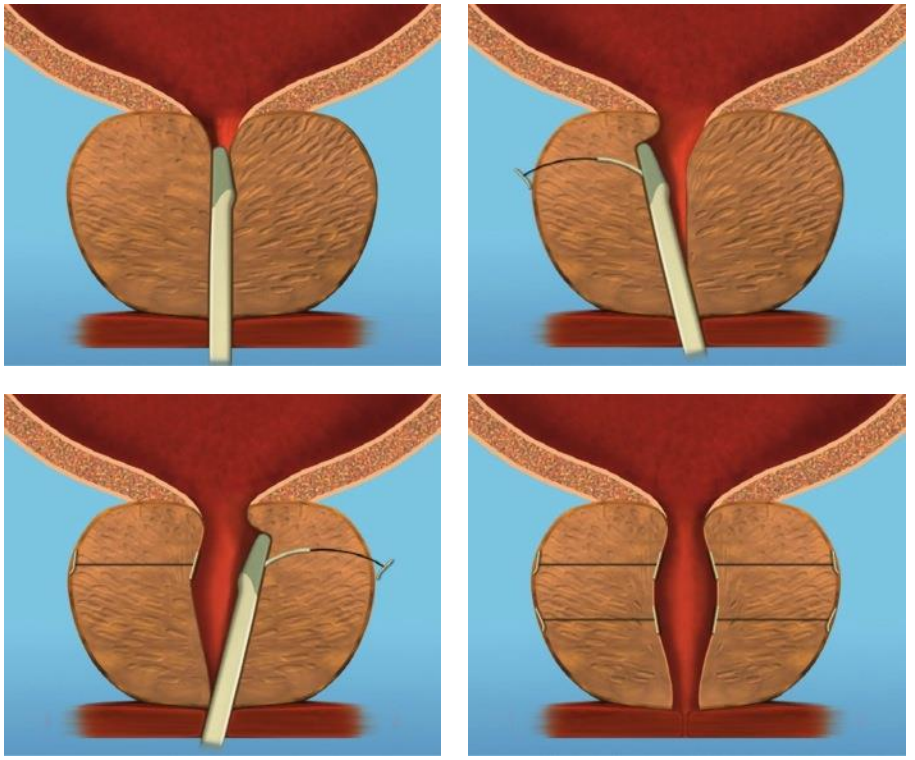
Those unfit for surgery
Those with large glands (>150g)

Imperial experience:
Largest gland 300g
All daycase (except CVA cases, overnight stay)
Long-term outcomes to be published with ROPE

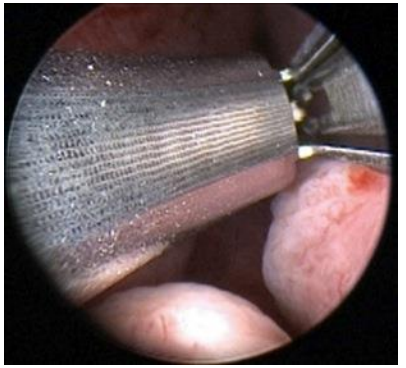
New alternatives

UroLift® Implant





- Compress encroaching lateral lobe
- Deliver UroLift® implant to hold in place



New alternatives

UroLift® Implant

Daycase treatment

Possible to avoid catheter

For small prostates

Main benefit: preserve retrograde ejaculation

THANK YOU

Female Urology in General Practice

Miss Tina Rashid BSc(Hons) FRCS(Urol)

Consultant Urological Surgeon

Imperial NHS Trust Charing Cross and Hammersmith Hospital

Imperial College Healthcare NHS Trust

Overview

- Frequency and urgency
- Urgency incontinence
- Stress urinary incontinence
- Recurrent UTIs
- Acute urinary retention
- Pelvic organ prolapse

The Scale of the Problem

- Urinary incontinence affects 1 in 3 women
- Costs the NHS £2.3billion/year
- …the same as diabetes and osteoporosis
- Affects all QoL domains
  - Physical
  - Emotional
  - Mobility
  - Social Embarrassment

Incontinence

- Urge Incontinence
- Stress Incontinence
- Mixed Incontinence
- Overflow Incontinence
- Continuous Incontinence

What's Normal…

- …daytime frequency?
  - <8 voids per day
- …nocturia?
- …urge?
  - *sudden compelling desire to void*
- …urgency?
  - *sudden compelling desire to void* ***that cannot be deferred***
- …leaking?
- …incomplete emptying?

ASSESSING THE FEMALE PATIENT WITH LUTS/INCONTINENCE

Assessing the female patient with LUTS/incontinence

- History
- Examination
- Simple Investigations

History

- When did your symptoms start?
- Any ‘red flag’ symptoms?
- If leaking:
  - Leak when coughing/sneezing/jumping *vs* leak associated with urgency
  - Small leak *vs* large leak?
  - How many pads?
- If UTIs:
  - triggered by sex/tampons?
- Associated Symptoms
  - Back/leg pain
  - Do you feel a bulge down below?
  - Bowel function
- Fluid intake: tea/coffee/alcohol/soft drinks
- Obstetric/Gynae history
- Smoking
- PMHx:
  - pelvic/spine surgery;
  - neurological disease

Red Flag Symptoms

- Non-visible or visible haematuria
- Bladder pain
- Recurrent UTIs/ new LUTS in >50 years old
- New renal impairment
- Sudden continuous incontinence
- History of radiotherapy

Examination

- BMI
- Abdominal examination
  - Palpable bladder
- Vaginal examination
  - How well oestrogenised is the perineum?
  - Is there a cystocele?
  - Is there a pelvic mass?
  - Any pelvic floor tone present?
- MSU
- (Post-void residual)

3-day Bladder Diary

- Objective
- Records
  - type of fluid in
  - volume of fluid in
  - volume of fluid out
  - voiding frequency
  - incontinence episodes
- Extra information
  - Functional bladder capacity
  - Nocturia (rule out polyurnal nocturia)

FREQUENCY & URGENCY

Frequency & Urgency

- Overactive bladder (OAB) is a symptom syndrome
  - Urgency with or without incontinence
  - Frequency
  - Nocturia
  - In the absence of pathological or metabolic factors

- OAB affects 1 in 3 women
- It is treatable
- OAB ≠ detrusor overactivity

History of OAB

- Nocturia
- ‘Latch-key’ incontinence
- Big leak
- ‘Toilet mapping’
- ↓ fluid intake to avoid leaking

...dency volume chart

DAY 1

Time	Drinks		Urine		Accidental Leaks
	What kind?	How much?	How urgent?	How much?	Y / N
Example	Coffee	2 Cups	1-3 (3 = most urgent)	25 mLs	YES
6–7 am					
7–8 am	Water	300	1	450	No
8–9 am					
9–10 am	Milk	250	1	150	No
10–11 am	Tea	400	1	150	No
11–12 midday	Water	300			
12–1 pm	Coffee	400	1	350	No
1–2 pm			1	150	No
2–3 pm					
3–4 pm					
4–5 pm	Orange Juice	250			
5–6 pm			1	250	No
6–7 pm	Water	300			
7–8 pm					
8–9 pm	Water	300			
9–10 pm					
10–11 pm					
11–12 midnight	Water	~~300~~	1	300	No
12–1 am	Water	~~300~~			
1–2 am					
2–3 am					
3–4 am					
4–5 am					
5–6 am				D = 5 N = 2	
Total		2830		2000	

DAY 2

Time	Drinks		Urine		Accidental Leaks
	What kind?	How much?	How urgent?	How much?	Y / N
Example	Coffee	2 Cups	1-3 (3 = most urgent)	25 mLs	YES
6–7 am			1	650	No
7–8 am					
8–9 am					
9–10 am	MILK	250	1	200	No
10–11 am	Tea	400			
11–12 midday	Water	300	2	550	No
12–1 pm	Water	500			
1–2 pm					
2–3 pm	Tea	400	1	350	No
3–4 pm					
4–5 pm					
5–6 pm	Coffee	250			
6–7 pm					
7–8 pm			1	450	No
8–9 pm					
9–10 pm	Orange Juice	300			
10–11 pm					
11–12 midnight					
12–1 am	Water	~~300~~			
1–2 am			1	250	No
2–3 am					
3–4 am					
4–5 am					
5–6 am				D = 4 N = 2	
Total		2700		2100	

DAY 3

Time	Drinks		Urine		Accidental Leaks
	What kind?	How much?	How urgent?	How much?	Y / N
Example	Coffee	2 Cups	1-3 (3 = most urgent)	25 mLs	YES
6–7 am					
7–8 am			1	300	No
8–9 am					
9–10 am	Milk Tea	250 400			
10–11 am					
11–12 midday	Coffee	400			
12–1 pm					
1–2 pm					
2–3 pm	Oranj	300	1	300	No
3–4 pm					
4–5 pm					
5–6 pm					
6–7 pm	Water	300			
7–8 pm	Water	300			
8–9 pm	Oranj	300			
9–10 pm	Tea	400			
10–11 pm	Water	~~300~~			
11–12 midnight					
12–1 am					
1–2 am					
2–3 am					
3–4 am					
4–5 am					
5–6 am			1	400	No
Total		2550			

Wake

Bed

quency volume chart

DAY 1

Time	Drinks		Urine		Accidental Leaks
	What kind?	How much?	How urgent?	How much?	Y / N
Example	Coffee	2 Cups	1–3 (3 = most urgent)	25 mLs	YES
6–7 am					
7–8 am					
8–9 am	TEA	1 250			N
9–10 am			2	180	
10–11 am	RIBENA	1 500 ML BOTEL			
11–12 midday			2	300	N
12–1 pm			2	270	N
1–2 pm	COCA COLA	1 ITT BOTE			
2–3 pm					
3–4 pm					
4–5 pm	TEA	1 200 ML			
5–6 pm					
6–7 pm			2	50	N
7–8 pm	WATER	2 350ML			
8–9 pm			1	50	N
9–10 pm	TEA	1 200 ML			
10–11 pm					
11–12 midnight	WATER	150 ML	1	75	N
12–1 am					
1–2 am					
2–3 am			2	50	
3–4 am					
4–5 am				50	
5–6 am					
Total		1,925		1925	

D = 4
N = 4

895

DAY 2

Time	Drinks		Urine		Accidental Leaks
	What kind?	How much?	How urgent?	How much?	Y / N
Example	Coffee	2 Cups	1–3 (3 = most urgent)	25 mLs	YES
6–7 am			2	50 ML	N
7–8 am					
8–9 am	TEA	1 250ML			
9–10 am					
10–11 am			2	250 ML	N
11–12 midday	RIBENA	1 500 ML			
12–1 pm			2	200 ML	N
1–2 pm					
2–3 pm			1	100ML	N
3–4 pm	TEA	1 250ML			
4–5 pm					
5–6 pm	RIBENA	500 M	1	50ML	N
6–7 pm					
7–8 pm	MILK WATER	200 200			
8–9 pm			2	100 ML	N
9–10 pm					
10–11 pm	TEA	200ML			
11–12 midnight			2	50 M	
12–1 am					
1–2 am			2	75	
2–3 am					
3–4 am					
4–5 am			3	100	
5–6 am					
Total		2100		925	

D = 5
N = 4

885

DAY 3

Time	Drinks		Urine		Accidental Leaks
	What kind?	How much?	How urgent?	How much?	Y / N
Example	Coffee	2 Cups	1–3 (3 = most urgent)	25 mLs	YES
6–7 am			1	50	N
7–8 am					Wake
8–9 am	TEA	1 250ML			
9–10 am			2	150 ML	N
10–11 am					
11–12 midday	WATER	500ML			
12–1 pm			2	190 ML	N
1–2 pm	7UP	330 ML			
2–3 pm			3	300M	N
3–4 pm	TEA	250			
4–5 pm			2	280ML	N
5–6 pm	MILK SHAKE	250			
6–7 pm					
7–8 pm			2	150ML	N
8–9 pm	APPLE JUICE WATER	300ML			
9–10 pm			2	50 ML	N
10–11 pm					Bed
11–12 midnight			2	40 ML	
12–1 am					
1–2 am					
2–3 am			3	150ML	
3–4 am					
4–5 am					
5–6 am				50 ML	
Total		1880		1440	

D = 6
N = 4

1440

Conservative Treatment Options

- Lifestyle changes
  - Drink 1.5-2L/day
  - NO caffeine
  - Take last drink a few hours before going to bed
  - Pass urine immediately before bed
  - Lose weight
  - Stress reduction
- Bladder retraining
- Pelvic Floor Muscle Training
  - Identify pelvic floor muscles
  - 10 short squeezes followed by 1 long squeeze 5x/day

Medical Treatment Options

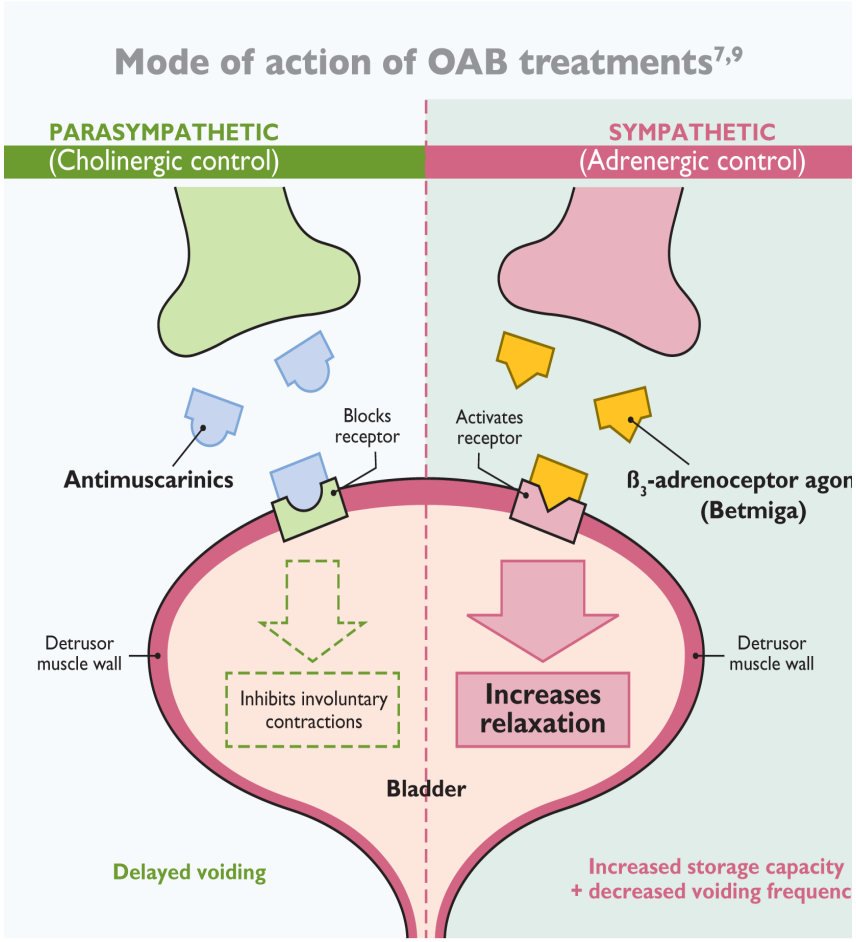
- Anti-cholinergics
- Beta 3 agonists

Anticholinergics

- Competitively inhibit cholinergic muscarinic receptors (responsible for bladder contraction)

⇩

- Efficacy 50-75%
- ↓ urgency episodes
- ↓ incontinence episodes
- ↓ frequency of micturition
- ↑ voided volume



Anticholinergics

- NICE guidance
  - Oxybutinin
  - Tolterodine
  - Darifenacin
- In practice
  - Solifenacin
    - 5mg OD for 2/52 then 10mg OD
  - Mirabegron
    - 50mg OD

- Contra-indications
  - myaesthenia gravis
  - uncontrolled narrow-angle glaucoma
  - ulcerative colitis
  - toxic megacolon
  - significant BOO/retention
- Side-effects
  - dry mouth
  - blurry vision
  - constipation
  - cognitive impairment
  - arrhythmia

Anticholinergic burden of commonly prescribed drugs

ACB SCORE 1 (MILD)			ACB SCORE 2 (MODERATE)	ACB SCORE 3 (SEVERE)		
Alimemazine	Digoxin	Metoprolol	Amantadine	Amitriptyline	Hydroxyzine	Quetiapine
Alverine	Dipyridamole	Morphine	Carbamazepine	Atropine	Imipramine	Solifenacin
Aripiprazole	Disopyramide	Nifedipine	Nefopam	Chlorpromazine	Methocarbamol	Tolterodine
Asenapine	Fentanyl	Paliperidone	Oxcarbazepine	Clemastine	Nortriptyline	Trifluoperazine
Atenolol	Furosemide	Prednisone	Pethidine	Clomipramine	Olanzapine	Trihexyphenidyl
Bupropion	Fluvoxamine	Ranitidine	Pimozide	Clozapine	Orphenadrine	Trimipramine
Captopril	Haloperidol	Risperidone		Darifenacin	Oxybutynin	Trospium
Cetirizine	Hydralazine	Theophylline		Dicycloverine	Paroxetine	
Cimetidine	Hydrocortisone	Trazodone		Dimenhydrinate	Perphenazine	
Codeine	Isosorbide	Triamterene		Doxepin	Promethazine	
Colchicine	Levocetirizine	Venlafaxine		Fesoterodine	Propantheline	
Desloratadine	Loperamide	Warfarin		Flavoxate	Propiverine	
Diazepam	Loratadine					

Adapted from the Anticholinergic burden scale 2012.[1]
Drugs not listed have an ACB score of 0.

1. Anticholinergic burden scale 2012. Available at: http://www.agingbraincare.org/tools/abc-anticholinergic-cognitive-burden-scale/. Last accessed: June 2015.

Beta 3 Agonists

- Mirabegron (Betmiga®)
- Stimulates ß$_3$-adrenoceptors in the detrusor muscle

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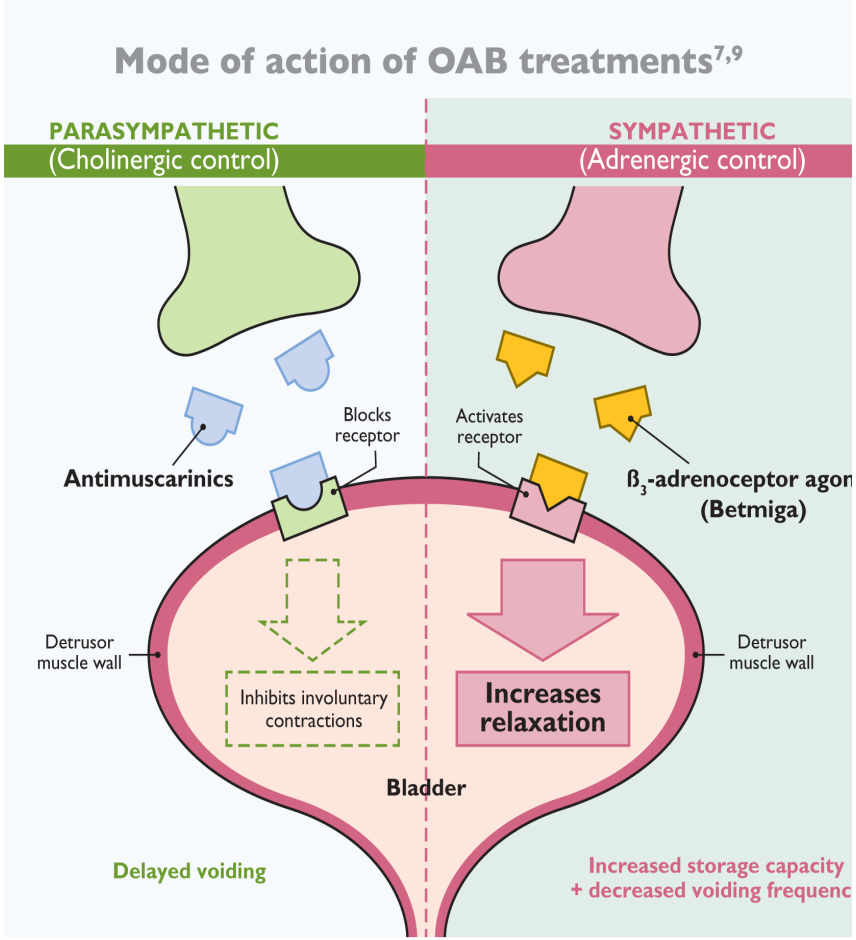
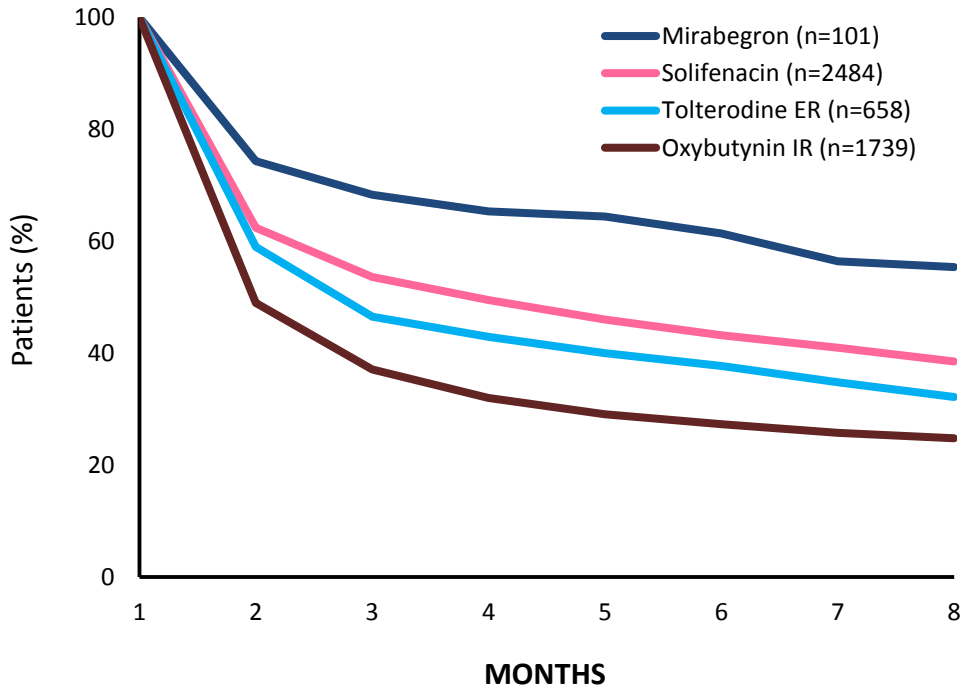
- Relaxes the detrusor muscle during the storage phase
- ↑ storage capacity
- ↓ voiding frequency



Persistence

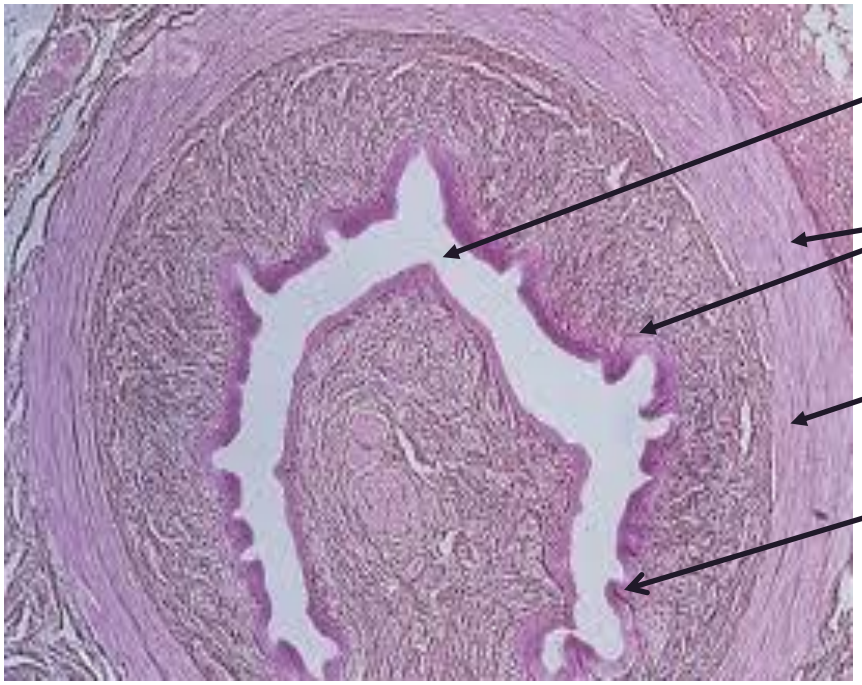


Patients starting a new course of OAB therapy in the 8 months to July 2013 were tracked for 8 months to measure how many remained on treatment.

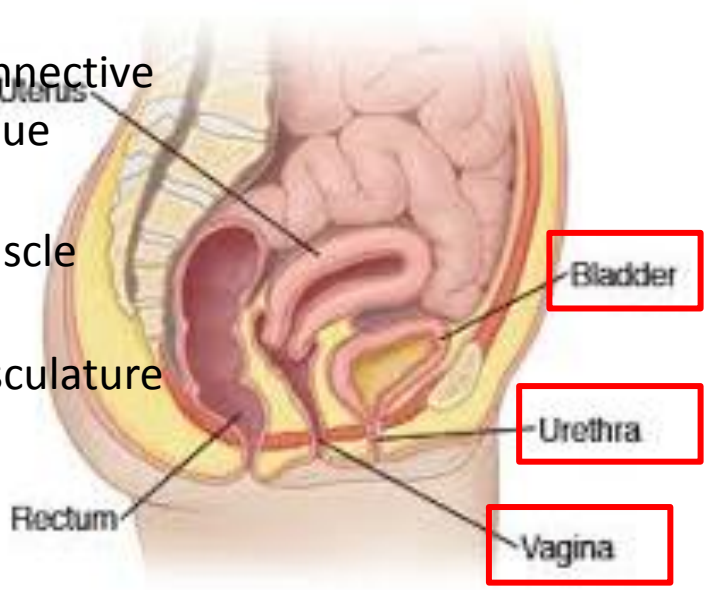
1. CSD Patient Data, Cegedim Strategic Data UK Ltd, March 2014.

Oestrogens

Oestrogen-sensitive urethra



α- and β- receptors



Evidence

Cochrane Review

Systemic oestrogen therapy worsens incontinence

Local vaginal oestrogen can improve incontinence, frequency and urgency

Oestrogens in Gynaecological Cancers

Safe in endometrial and ovarian cancers

Care in endometrial sarcoma and granulosa cell tumour of ovary

Safe in vulval, vaginal and cervical cancers

Safe in breast cancer for a short period

Cochrane Database Syst Rev. 2012 Oct 17;10:CD001405. doi: 10.1002/14651858.CD001405.pub3.

Oestrogen therapy for urinary incontinence in post-menopausal women.

Cody JD[1], Jacobs ML, Richardson K, Moehrer B, Hextall A.

When Medical Management Fails…

- One-Stop **F**emale **L**ower **U**rinary **T**racts **S**ymptoms **C**linic

- FLUTS Clinic

⇩

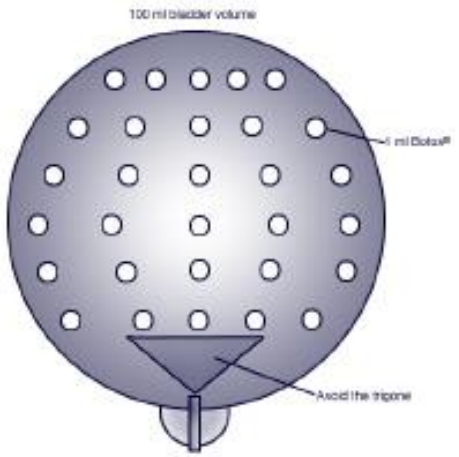
- Assessed by Consultant
- Urodynamics ± flexible cystoscopy ± USS kidneys

⇩

- Diagnosis

Invasive Treatment Options

- Posterior Tibial Nerve Stimulation
- Intravesical Botulinum
- Sacral Nerve Stimulation
- Clam cystoplasty
- Ileal conduit diversion



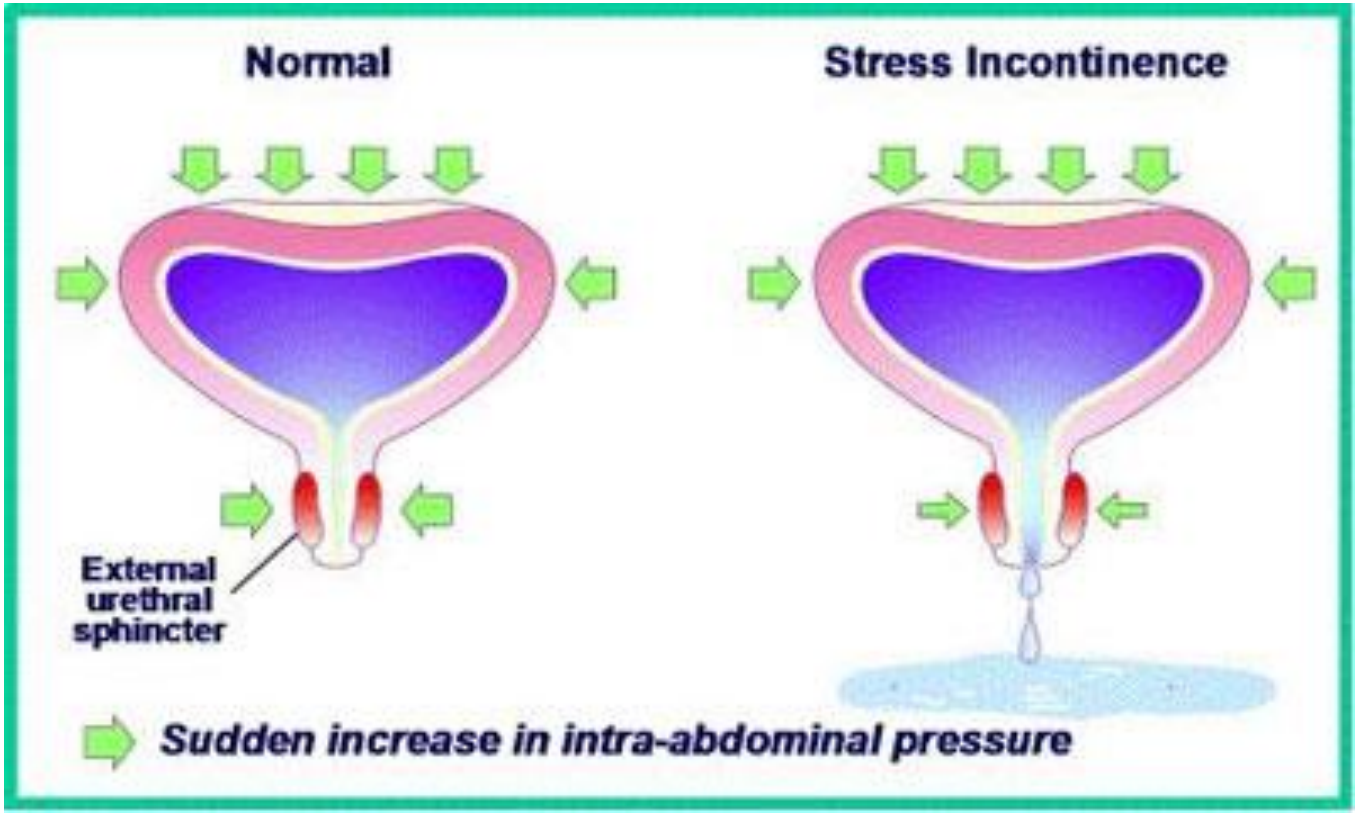
STRESS INCONTINENCE

Stress Incontinence

- *involuntary leakage of urine on coughing, straining, exertion or effort*

- Prevalence 12-52%
- ↑ risk
  - Pregnancy
  - Parity
  - Age
  - Post-menopause

Stress Incontinence



Conservative Management of Stress Incontinence

- Lifestyle changes
  - Weight loss
  - Smoking cessation
  - Modification of fluid intake
- Supervised pelvic floor exercises
- Bladder retraining
- Refer to local continence advisors for support

Medical Management of Stress Incontinence

- Vaginal oestrogens
  - improves vaginal atrophy
  - ⬇ UI, frequency and urgency in OAB
  - Vagifem (or ovestin)
    - 10mcg BD for 2/52 then
    - OD for 2/52 then
    - 2x/week for 2/12

- Duloxetine
  - improves UI
  - withdrawal rate 20-40%

When Medical Management Fails…

- One-Stop **F**emale **L**ower **U**rinary **T**racts **S**ymptoms **C**linic

- FLUTS Clinic

⇩

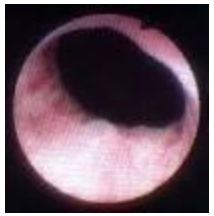
- Assessed by Consultant
- Urodynamics ± flexible cystoscopy ± USS kidneys

⇩

- Diagnosis

Surgical Management of Stress Incontinence

- Urethral bulking agents
  - e.g. macroplastique or bulkamid



- Mid-urethral slings / Tapes
  - TOT/TVT/TVT-O

- Colposuspension
- Diversion

RECURRENT UTIS

Diagnostic Difficulties

- There is no fixed bacterial count that is indicative of significant bacteriuria, which can be applied to all kinds of UTIs and in all circumstances

  - > 10^3cfu/mL acute uncomplicated cystitis
  - > 10^4 cfu/mL acute uncomplicated pyelonephritis
  - > 10^5 cfu/mL in a complicated UTI

Age-related risk factors for UTIs in women

Young and premenopausal women	Postmenopausal and elderly women
Sexual intercourse	History of UTI before menopause
Use of spermicide	Urinary incontinence
A new sexual partner	Atrophic vaginitis due to oestrogen deficiency
A mother with a history of UTI	Cystocoele
History of UTI during childhood	Increased post-void urine volume
	Blood group antigen secretory status
	Urine catheterisation and functional status deterioration in elderly institutionalised women

History & Examination

- Number of infections/year
- Specific triggers/risk factors
- Symptoms of UTI
- Background symptoms in the absence of UTI
- Menopause
- Fluid intake
- Oestrogen status of perineum
- Anatomical abnormalities
- Urine culture
- Post-void residual
- USS KUB and cystoscopy*

*in atypical cases or if red flag symptoms

Management of rUTIs

Non-antimicrobial measures

- Behavioural
- Hormone replacement therapy
- Oral therapy
- Intravesical instillation
- Immunotherapy
- Probiotics

Antimicrobial measures

- Post-coital antibiotics
- Antibiotic prophylaxis
- SOS antibiotics

Management of rUTIs

Non-antimicrobial measures

- **Behavioural**
- Hormone replacement therapy
- Oral therapy
- Intravesical instillation
- Immunotherapy
- Probiotics

- Adjust fluid intake
- Avoid nylon/thongs
- Avoid douching
- Wipe from front-to-back
- Double voiding
- Void after sexual intercourse

Management of rUTIs

Non-antimicrobial measures

- Behavioural
- **Hormone replacement therapy**
- Oral therapy
- Intravesical instillation
- Immunotherapy
- Probiotics

- Post-menopausal women
- What regimen/what dose?

Management of rUTIs

Non-antimicrobial measures

- Behavioural
- Hormone replacement therapy
- **Oral therapy**
- Intravesical instillation
- Immunotherapy
- Probiotics

- Cranberry (*vaccinium macrocarpon*)
- D-mannose

Management of rUTIs

Non-antimicrobial measures

- Behavioural
- Hormone replacement therapy
- Oral therapy
- **Intravesical instillation**
- Immunotherapy
- Probiotics

- Cystistat
- iAluril
- Hyacyst
- DMSO

Management of rUTIs

Non-antimicrobial measures

- Behavioural
- Hormone replacement therapy
- Oral therapy
- Intravesical instillation
- **Immunotherapy**
- Probiotics

- OM-89 (Uro-Vaxom®)
- Urovac®

Management of rUTIs

Non-antimicrobial measures

- Behavioural
- Hormone replacement therapy
- Oral therapy
- Intravesical instillation
- Immunotherapy
- **Probiotics**

- Probiotics (*Lactobacillus sp*)

Management of rUTIs

Antimicrobial measures

- **Post-coital antibiotics**
- Antibiotic prophylaxis
- SOS antibiotics

- Consider prior to pregnancy
- Only after counselling and behavioural modification has been attempted, and when non-antimicrobial measures have been unsuccessful

Management of rUTIs

Antimicrobial measures

- Post-coital antibiotics
- **Antibiotic prophylaxis**
- SOS antibiotics

- Only after counselling and behavioural modification has been attempted, and when non-antimicrobial measures have been unsuccessful
- NB: long-term prophyaxis with nitrofurantoin can rarely cause severe pulmonary and hepatic adverse effects

Management of rUTIs

Antimicrobial measures

- Post-coital antibiotics
- Antibiotic prophylaxis
- **SOS antibiotics**
  - in *appropriate* women with recurrent uncomplicated cystitis

Conclusion

- In vast majority of cases: treat simply
  - Watch out for red flags

  - Urology advice e-mail

Thank you

Imperial College Healthcare NHS
NHS Trust