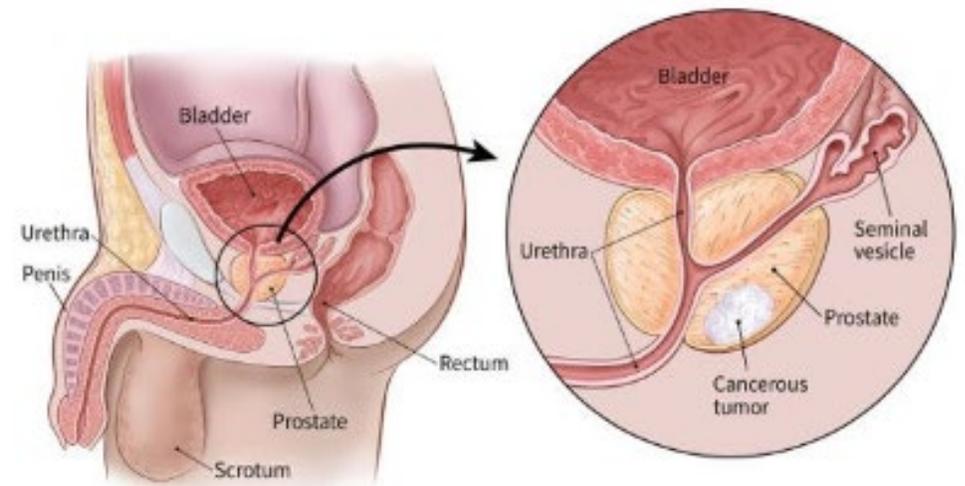


PROSTATE

Anatomy

- Gland of the male reproductive system
- Main purpose to produce fluid for semen
- Located in front of rectum just below bladder
- About size of chestnut, somewhat tapered in shape
- The prostate and plexus are surrounded by the prostatic fascia
- Denonvilliers' fascia – Posterior portion of the fascia
- Forms a barrier between prostate and rectum



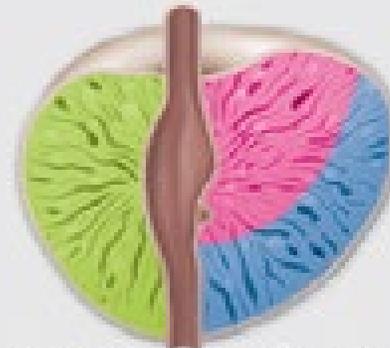
Lobes and Zones of the Prostate

The lobes and zones help map out the locations of the biopsies

Lobes

- Lateral
- Middle (median)
- Anterior (isthmus)
- Posterior

Median sagittal section



Anterior Posterior

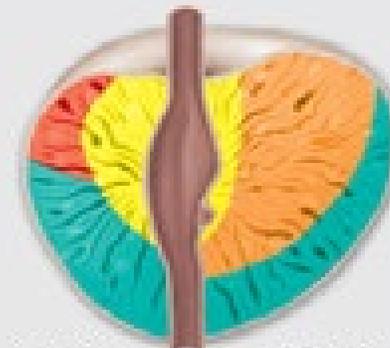
Transverse section



Anterior Posterior

Zones

- Peripheral
- Central
- Transitional (periurethral)
- Fibromuscular



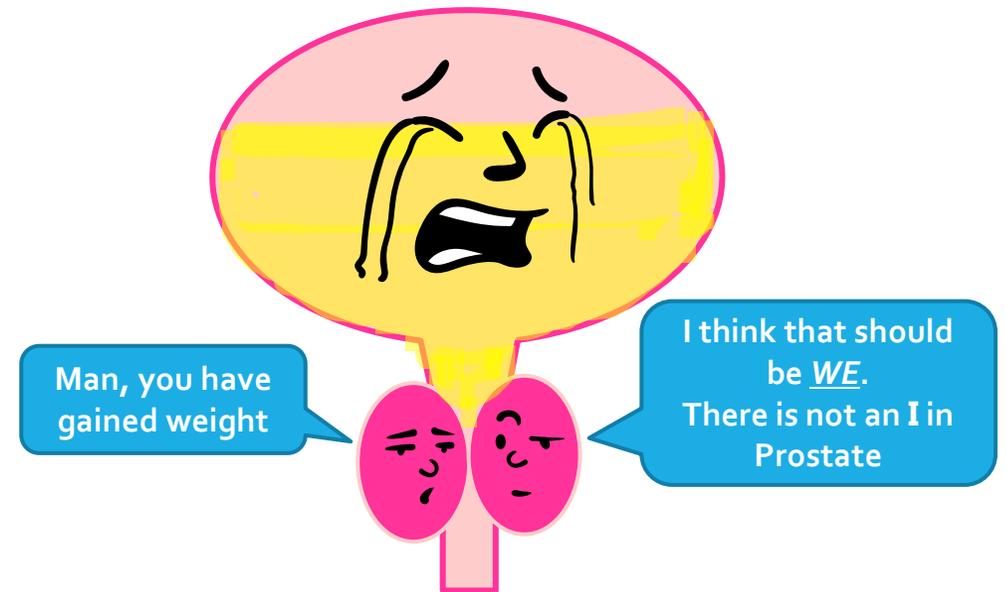
Anterior Posterior



Anterior Posterior

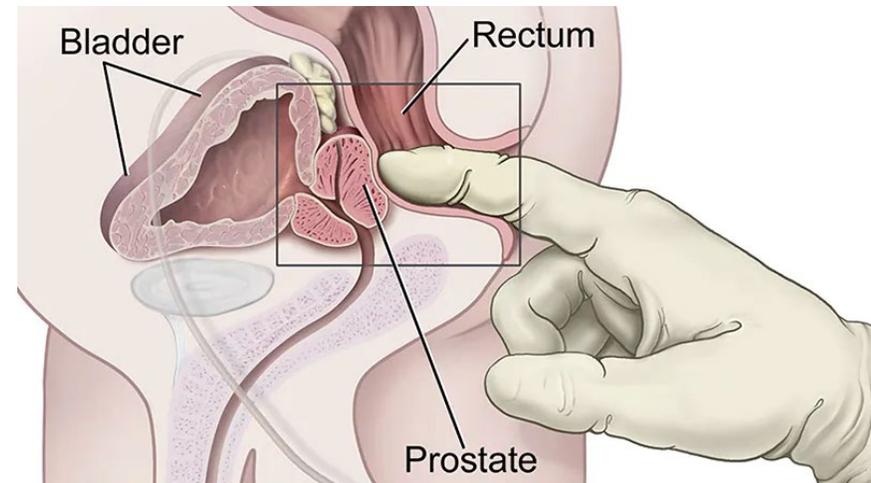
Signs & Symptoms

- Early stage prostate cancer is silent
- Weak urinary stream
- Frequent &/or urgent urination, nocturia
- Difficulty starting/stopping stream
- Incomplete bladder emptying
- Painful burning urination
- Blood in urine or semen
- Painful ejaculation
- Pain or stiffness in lower back, hips or upper thighs



Diagnosis and Work-up

- Prostate Specific Antigen
 - Not diagnostic without other work-up
- Digit Rectum Exam (DRE)
 - The Gold Standard
 - Clinical T cannot be staged without it
 - Most tumors arise in the peripheral zone (outer zone)
 - Whether the tumor is palpable on physical exam is an important clinical indicator
- Ultrasound guided Core Biopsy
 - Can also be a TURP or TURBT
- Date of Dx will be which ever of the following occurs ***first***
 - Date of positive histologic confirmation
 - Date the physician documented that he/she ***suspects*** that the patient has prostate cancer



PSA

Prostatic specific antigen (PSA) screening

- Prostate-specific antigen (PSA) is a protein made by cells in the prostate gland (both normal cells and cancer cells)
- PSA is mostly found in semen, but a small amount is also found in blood
- The chance of having prostate cancer goes up as the PSA level goes up
- Not diagnostic without other work-up

Extraneous factors can negatively impact PSA results

The doctor might suggest abstaining from certain activities for a few days or week before testing

The PSA can fluctuate over time due to biological and/or extraneous factors

There may be multiple PSA results located in that patients file

Factors that might **raise PSA levels** include:

- **Diagnostic staging procedures:** Some procedures done in a doctor's office that affect the prostate, such as a prostate biopsy or cystoscopy, can raise PSA levels for a short time
 - This is why the timing rule in regard to using the PSA prior to biopsy is so important
- Some studies have suggested that a digital rectal exam (DRE) might raise PSA levels slightly, although other studies have not found this. Still, if both a PSA test and a DRE are being done during a doctor visit, some doctors advise having the blood drawn for the PSA before having the DRE, just in case.
- **An enlarged prostate:** Conditions such as **benign prostatic hyperplasia (BPH)**
- **Older age:** PSA levels normally go up slowly as you get older
- **Prostatitis:** This is an infection or inflammation of the prostate gland
- **Ejaculation:** This is why some doctors suggest that men abstain from ejaculation for a day or two before testing
- **Riding a bicycle:** Some studies have suggested that cycling may raise PSA levels for a short time (possibly because the seat puts pressure on the prostate), although not all studies have found this
 - Motorcycles and jets skis are also included
- **Certain medicines:** Taking male hormones like testosterone (or other medicines that raise testosterone levels) may cause a rise in PSA



Don't Poke The Bear

Histologic Confirmation

- Endoscopy
- Cystoscopy, proctosigmoidoscopy,
- Laparoscopy
- Transrectal needle biopsy
- Transperineal needle biopsy
- Transurethral core biopsy

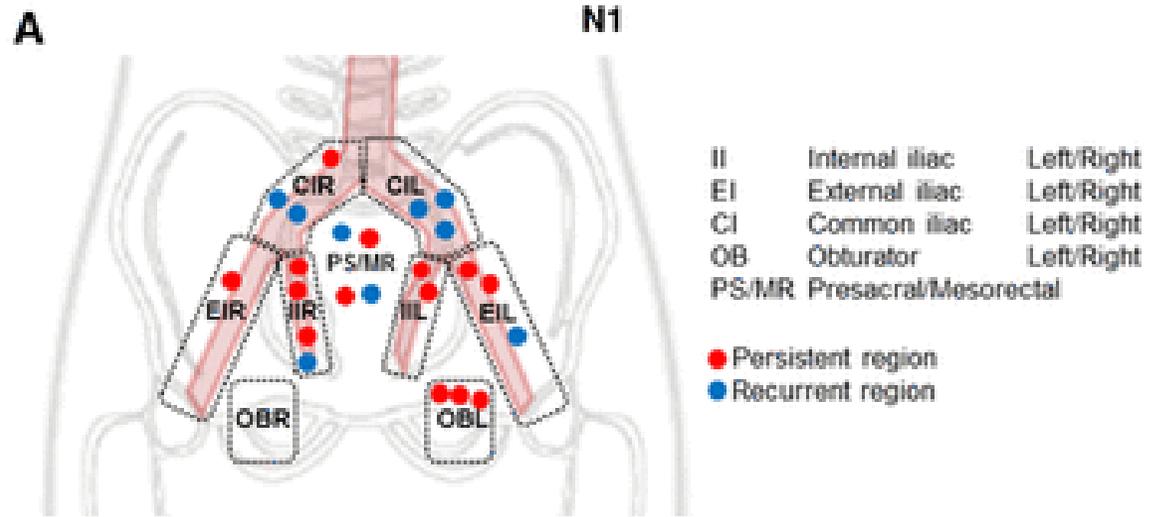
Treatment Nomograms and Predictive Models

- **Assessment of risk**
 - How likely is a cancer to be confined to the prostate?
 - How likely is the cancer to progress after treatment?
- **Predictions based on:**
 - Clinical stage
 - Biopsy Gleason Grade
 - Preoperative PSA

Biochemical Recurrence after Radical Prostatectomy

- PSA level fails to fall to undetectable levels after primary treatment (radical prostatectomy or radiation).
- Undetectable PSA after primary treatment with subsequent detectable PSA level that increase on 2 or more labs

Lymph Nodes



- Localized
 - ◦ Very Low Risk
 - ◦ Low Risk
 - ◦ Intermediate Risk
 - ◦ Good prognostics
 - ◦ Poor prognostics
 - ◦ High Risk
- Very High Risk (locally advanced)
- Metastatic Disease

RX Summ – Treatment Status

NAACCR # 1285

Description

This data item summarizes whether the patient received any treatment, or the tumor was under active surveillance

Rationale

This item documents active surveillance (watchful waiting) and eliminates searching each treatment modality to determine whether treatment was given. It is used in conjunction with Date of First Course of Treatment [1270] to document whether treatment was or was not given, it is unknown if treatment was given, or treatment was given on an unknown date

Code	Label
0	No treatment given
1	Treatment given
2	Active surveillance (watchful waiting)
9	Unknown if treatment was given

Active Surveillance

- Active surveillance involves actively monitoring the course of disease
- PSA testing every 3-6 months
- DRE as often as every 6-12 months
- Repeat biopsies every 6-18 months
- Expectation that, on signs of disease progression, physician will intervene with curative intent

Also referred to as:

- Watchful Waiting
- Expectant management
- Deferred Therapy

Patient Changes Mind on Treatment

- According to Dr. Winchester the rule of thumb is:
- If the change was made **before** the patient's first scheduled follow-up doctor's visit, after the decision to use active surveillance, then it is a change **in** first course treatment
- If the change occurs **after** the patient's first scheduled follow up doctor's visit, first course treatment ends and second course treatment begins

<http://cancerbulletin.facs.org/forums/forum/fords-national-cancer-data-base/fords/first-course-of-treatment/surgery/5832-1st-course-tx-vs-subsequent-prostate-ca-watchful-waiting-followed-by-surgery-or-xrt>

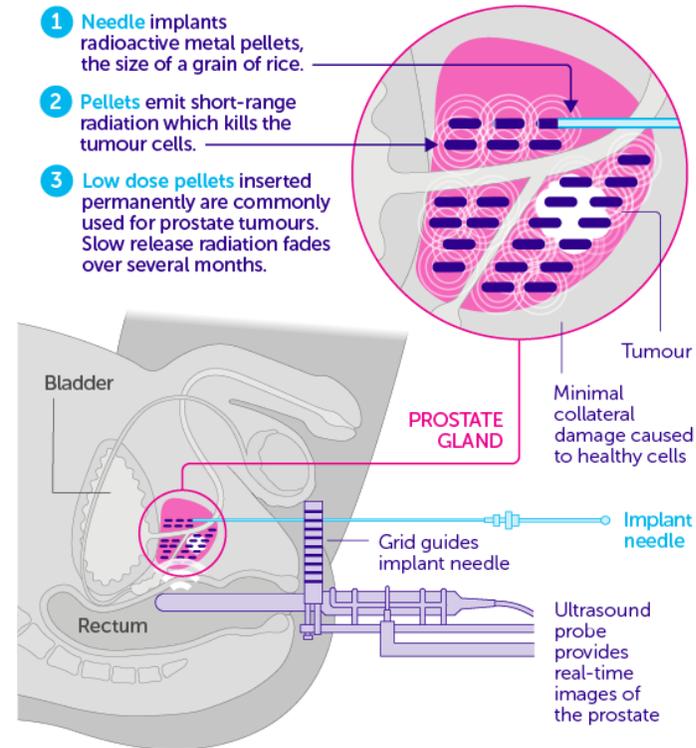


Radiation

WHAT IS BRACHYTHERAPY AND HOW IS IT USED TO TREAT PROSTATE CANCER?

Brachytherapy kills cancer cells by placing a radioactive source next to the tumour using surgery. It is most suitable for small solid tumours that haven't spread and can be reached with surgery.

- 1 Needle implants radioactive metal pellets, the size of a grain of rice.
- 2 Pellets emit short-range radiation which kills the tumour cells.
- 3 Low dose pellets inserted permanently are commonly used for prostate tumours. Slow release radiation fades over several months.



Surgery

- TURP
 - ◦ 20 Local tumor excision, NOS
 - ◦ 21 Transurethral resection
 - (TURP), NOS, with specimen
 - sent to pathology
 - ◦ 22 TURP–cancer is incidental
 - finding during surgery for benign
 - disease
 - ◦ 23 TURP–patient has
 - suspected/known cancer

- Radical Prostatectomy
 - ◦ 50 Radical prostatectomy, NOS;
 - total prostatectomy, NOS
 - ◦ Excised prostate, prostatic capsule,
 - ejaculatory ducts, seminal vesicle(s)
 - and may include a narrow cuff of
 - bladder neck.
- Pelvic lymph node dissection
 - ◦ Limited
 - ◦ Extended

- Androgen Deprivation Therapy (ADT)
- Bilateral orchiectomy
- Luteinizing hormone-releasing hormone (LHRH) *agonist*
- ◦ Chemical castration-they lower androgen levels as well as a
- orchiectomy.
- ◦ LHRH *antagonist* work in a similar manner, but do not cause the
- initial testosterone flare.
- Anti-androgens bind to the androgen receptor in order to
- stop androgens from working.
- ◦ When combined with LHRH or Orchiectomy they are called a
- combined androgen blockade (CAB)

- May be administered as a primary systemic treatment
- in patients with advanced disease.
- Has been shown to decrease the time to biochemical
- recurrence when given in combination with radiation in
- localized or locally advanced disease.
- Has not been shown to benefit as a neoadjuvant
- treatment for men who have been treated with radical
- prostatectomy.

- External Beam Radiation Therapy (EBRT)
 - ◦ Photon or Proton
 - ◦ Highly conformal techniques should be used
 - ◦ IMRT
 - ◦ SBRT
 - ◦ SABR
- Brachytherapy
- Combined EBRT and Brachytherapy

Grade

- Prostate ID# 00580
- Grade Table: 17
- AJCC preferred grading system
- AJCC preferred grade is required to assign stage group
- Grading system: Gleason Score
 - Alternative grading system
 - Pattern based
 - Primary pattern
 - Second most predominate pattern
 - Tertiary Pattern

Code	Grade Description
1	Grade Group 1: Gleason score less than or equal to 6
2	Grade Group 2: Gleason score 7 Gleason pattern 3+4
3	Grade Group 3: Gleason score 7 Gleason pattern 4+3
4	Grade Group 4: Gleason score 8
5	Grade Group 5: Gleason score 9 or 10
A	Well differentiated
B	Moderately differentiated
C	Poorly differentiated
D	Undifferentiated, anaplastic
E	Stated as "Gleason score 7" with no patterns documented or Any Gleason patterns combination equal to 7 not specified in 2 or 3
9	Grade cannot be assessed; Unknown

- Codes 1-5 are Calculated Gleason Score
- Codes 1-5 take priority coding over Codes A-E
- Codes 1-5 are required to assign stage group
- Codes A-D cannot be used to assign AJCC stage group
- Gleason Score 7: If only given a Gleason score of 7 but does not give Gleason Pattern

Gleason System for Grading Prostate Cancer

- Patterns based on 5 component system
 - Scale based on how abnormal the cell looks
 - 1 = looks very much like normal cell
 - 5 = looks very different
 - Primary pattern
 - Most predominate pattern in tumor
 - Pattern that the tumor is most comprised of
 - Secondary pattern
 - Second most predominant pattern
- **Gleason's score**
 - Sum of primary + secondary patterns = Gleason Score
- Tertiary pattern
 - The third pattern most seen in tumor
 - Used to gage aggressiveness of cancer
 - Pattern associated with a worse outcome

EOD

Prostate

EOD Primary Tumor

- This is based on **CLINICAL** finding **ONLY!**
 - Information from Radical Prostatectomy are **excluded**
- **Clinical Assessment of Tumor**
 - Based on DRE
 - **Clinically inapparent tumors** are not palpable. Physician documentation of a DRE that does not mention a palpable "tumor", "mass", or "nodule" can be inferred as inapparent. This would include findings limited to benign prostate enlargement/hypertrophy.
 - **Clinically apparent tumors** are palpable. If a clinician documents a "tumor", "mass", or "nodule" by physical examination, this can be inferred as apparent.
 - **Don't use** imaging **UNLESS** physician clearly incorporates findings into evaluation
 - **Don't use** biopsy results **UNLESS** they **prove** extraprostatic extension

EOD Extraprostatic Extension

- This is based on PATHOLOGICAL findings
- Radical prostatectomy and/or autopsy must be done to code in this field
- Information from radical prostatectomy performed within the first course of treatment
 - If radical prostatectomy is done as second course/subsequent treatment, assign **code 950**
- **Do Not Use:** Information from biopsy of extraprostatic sites
- **Do Not Use:** Results from a transurethral resection of prostate (TURP) or simple prostatectomy

EOD Regional Lymph Nodes

- Code only regional nodes and nodes, NOS, in this field
 - Distant nodes are coded in EOD Mets
- Regional nodes include contralateral or bilateral nodes
- Prostate is considered an **Inaccessible** site for regional lymph nodes
 - Assume negative when workup done with no mention of LN's



*Pick a Code
not a Side,
We are all
regional nodes*

*Unless you are a distant node, if so,
Please attend the coding in the next slide*



EOD Distant Mets

- Use code 70 when the only information is “distant metastasis, NOS,” and there is no documentation regarding the specific metastases.
- If there are specific metastasis documented that are not listed in codes 10, 30, or 50, assign code 50 for “other specified distant metastasis.”
- EOD Mets and Mets at Dx should **match**
- If Mets at Dx codes were coded indicating mets than EOD mets cannot be coded 10-70
- If Mets at Dx codes were coded 0, then EOD mets must be coded 00

SSDI

Prostate

Number of Cores Positive and Examined

- A diagnostic procedure, such as a needle core biopsy, can take as many as 20 or more core biopsies to determine the extent of the cancer within the prostate
- These 2 data items record the number of positive cores found and the number of cores that were examined
- Number of Cores Positive must **ALWAYS** be less than or equal to Number of Cores Examined
- The results from the number of cores positive and number of cores examined needs to come from the same diagnostic procedure
- A doctor's statement to the number of cores positive and the number or cores examined can be used
 - Be careful a statement of the number of positive cores does not equal the number of cores examined and vice versa
- Do not make assumptions about the number of cores positive or examined based on the number of areas biopsied within the prostate (laterality, lobes, apex, base, or mid-prostate)
 - Several cores may be taken from each area
- Additional biopsy results gathered after diagnosis (follow-ups for watchful waiting) are not included in this data item

It's tricky...tricky, tricky, tricky, tricky

Examples:

Doctor's statement of 8 cores positive, no additional information given

Cores positive: o8

Cores Examined: X6

Rationale: Number of positive cores but no mention of the number examined

Path report: Apex (positive), Base (positive) Peripheal middle (positive), Center (negative)

Cores positive: X6

Cores Examined: X6

Rationale: Stated areas produced positive cores, but did not give number and stated zone/lobe locations but did not give the number positive or the number of cores taken from each location

Rules:

If it states the exact number use it

If it give you the number positive, do not assume the number examined is the same number

An area examined (zone/lobe) without mention of the number of cores taken does not equal 1 core

Code what you know!

Do not assume!

Cores Positive Codes

Code	Description
00	All examined cores negative
01-99	1 - 99 cores positive (Exact number of cores positive)
X1	100 or more cores positive
X6	Biopsy cores positive, number unknown
X7	No needle core biopsy performed
X8	Not applicable: Information not collected for this case (If this information is required by your standard setter, use of code X8 may result in an edit error.)
X9	Not documented in medical record Number of cores positive not assessed or unknown if assessed

Cores Examined Codes

Code	Description
01-99	1 - 99 cores examined (Exact number of cores examined)
X1	100 or more cores examined
X6	Biopsy cores examined, number unknown
X7	No needle core biopsy performed
X8	Not applicable: Information not collected for this case (If this information is required by your standard setter, use of code X8 may result in an edit error.)
X9	Not documented in medical record Number of cores examined not assessed or unknown if assessed

Gleason Tertiary Pattern

- This is a **PATHOLOGICAL** code, radical prostatectomy or autopsy must be completed to code
- Physician statement of Gleason tertiary pattern can be used to code this data item when there
- Record the tertiary pattern documented on radical prostatectomy or autopsy only.
- Record the tertiary pattern prior to neoadjuvant treatment
- If a tertiary pattern is documented on needle core biopsy or transurethral resection of prostate (TURP), it should be disregarded (This is Clinical findings)
- Do not code the tertiary pattern on radical prostatectomy or autopsy in Gleason Patterns Pathological





Tumor Size

- Imaging-guided tissue biopsy (i.e., incisional biopsy done under imaging)
 - i. Do not use the size from a core biopsy or needle biopsy for clinical tumor size unless you are confident that the size corresponds to the tumor rather than the size of the specimen obtained. Core biopsies and needle biopsies do not necessarily obtain enough tissue to know the actual tumor size.
Example: Prostate biopsy, pathologist states core 1: tumor involves 8 mm of core; core 2: tumor involves 3 mm of core. The sizes reported (8 mm and 3 mm) do not represent the size of the prostate tumor. Look for a tumor size on imaging or elsewhere for this case.

Summary stage prostate

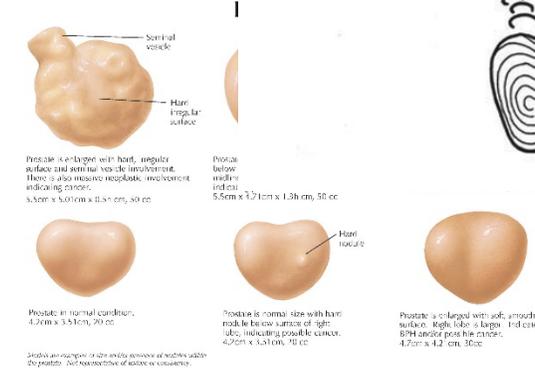
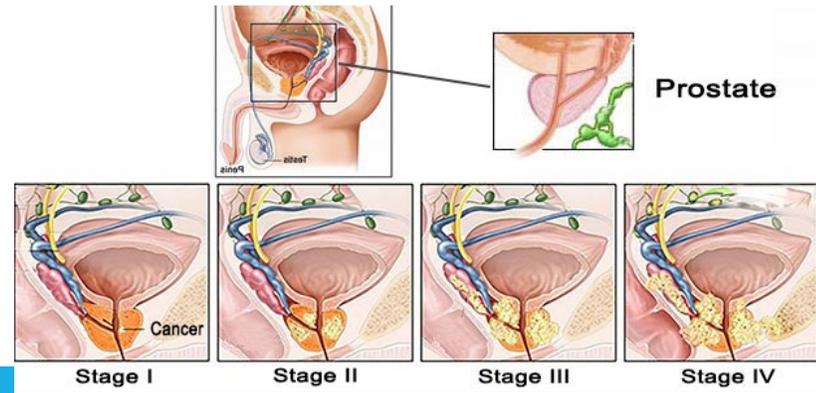
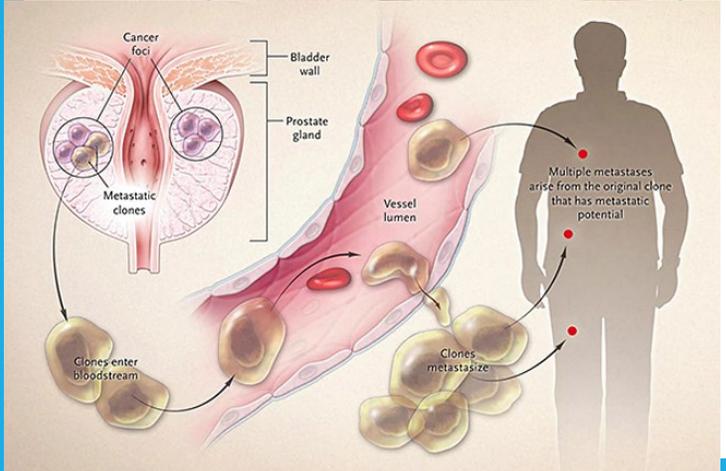
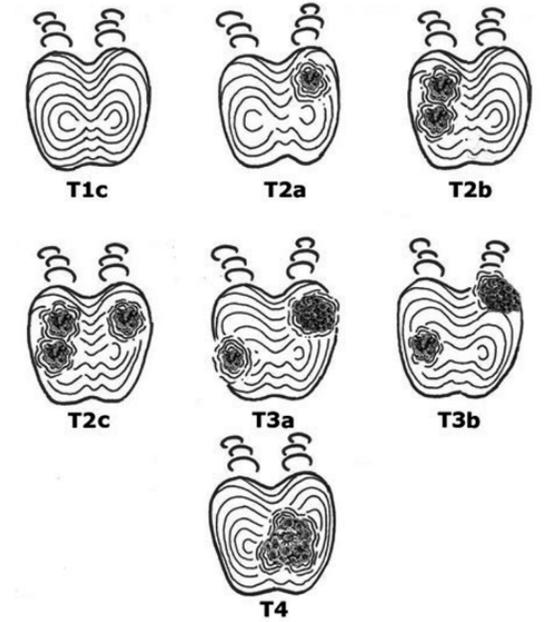
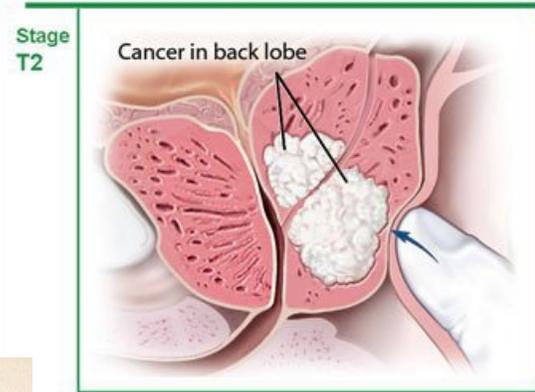
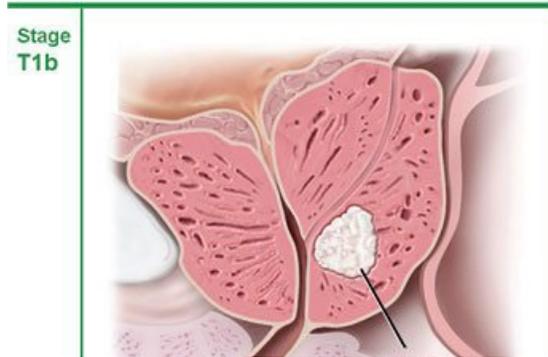
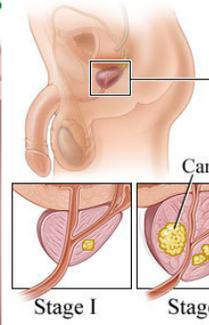
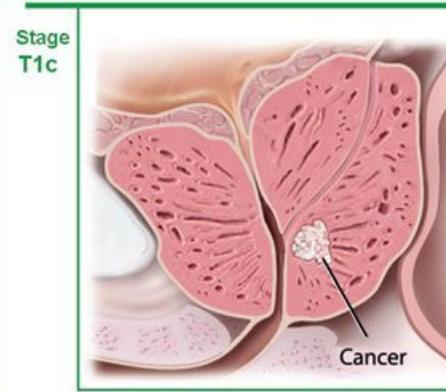
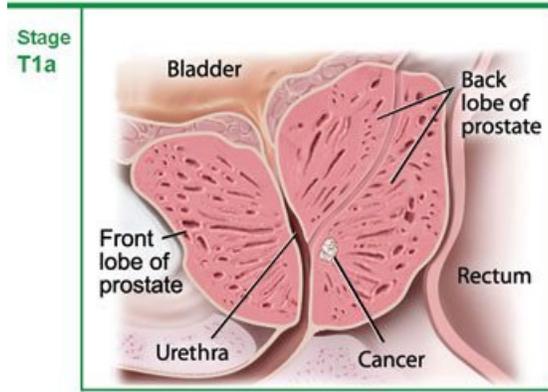
- Is a combination of the most precise clinical and
- pathological documentation of the extent of disease
- 1-Digit field
- Involvement of prostatic urethra does not alter the
- Summary Stage code

SS2018 Table

PROSTATE CANCER STAGES

- Stage I** - the cancer is small and only in the prostate
- Stage II** - the cancer is larger and may be in both lobes of the prostate but is still confined to the prostate
- Stage III** - the cancer has spread beyond the prostate to close by lymph glands or seminal vesicles
- Stage IV** - the cancer has spread to other organs such as the bone and is referred to as metastatic cancer. If prostate cancer spreads, or metastasizes, to the bone, you have prostate cancer cells in the bone, not bone cancer

For a detailed description of each stage, see the information at the bottom of the page.
Detailed Staging, adapted from www.cancer.gov.



AJCC

Rules of Classification

Clinical Stage

- Diagnosis and staging work-up
- T value is based on DRE

Pathological Stage

- Total prostatectomy
- Pathologic confirmation extension to the rectum,
- Extraprostatic tissue, or extension to the seminal vesicle

AND

- Pathologic confirmation of a positive lymph node (highest N)

Primary Tumor-Clinical

- T value is based on results of
- DRE
 - Imaging should not be used
 - If information on results of DRE are not available or if it is unknown if DRE was performed, leave T value blank
- cT1a and cT1b are clinically inapparent tumors
- cT2-cT4 tumors are clinically apparent tumor and are coded based on results of DRE

Clinically Inapparent Tumor

- Was the diagnosis based on an incidental finding during TURP?
- What percentage of the TURP
- Tissue is prostate cancer?
- More or less than 5%?
- Was a biopsy done due to an elevated PSA?

Clinically Apparent Tumor

- Tumor is large enough to be felt on DRE
 - Can the tumor be felt in more than one lobe?
 - If just one lobe, is it taking up more than half the lobe?
 - Can extension beyond the prostate be felt?
 - Can extension to the seminal vesicles be felt?
 - Is the tumor fixed?

Subcategories

- If there is no description that would guide selection of the subcategory it would be correctly assigned cT2
- If the subcategory changes the stage group and the subcategory is unknown, then the stage group must be 99

Extraprostatic Extension

- Is there extracapsular extension?
 - Is there bladder neck invasion?
- Is there invasion into the extracapsular seminal vesicles?
- Is there invasion to surrounding organs?

Regional Lymph Nodes

- Iliac, NOS
 - External
 - Internal (hypogastric)
 - Obturator
- Pelvic, NOS
- Periprostatic
- Sacral, NOS:
 - Lateral (laterosacral)
 - Middle (promontorial)
 - Presacral
- Regional lymph node(s), NOS

Mets

Other Organs or Structures

- Bone
- Lung
- Liver

Distant Lymph Nodes

- Aortic
- Common Iliac
- Inguinal
- Supraclavicular
- Cervical
- Scalene
- Retroperitoneal

SSDI

PSA

- Record the **last pre-diagnosis PSA value prior** to biopsy
- and/or initiation of treatment **and** no earlier than ~ 3 months before dx
- Record to the nearest tenth in nanograms/milliliter
 - Micrograms per liter (ug/L) = nanograms per milliliter (ng/ml)

PSA

Cores Positive/Examined

Gleason Patterns and scores



Prostate Gland

- ❖ Gland of the male reproductive system & is located in front of rectum just below bladder
- ❖ Main purpose to produce fluid for semen
- ❖ About size of chestnut, somewhat conical in shape
- ❖ Consists of base, apex, anterior, posterior & lateral surfaces
- ❖ The prostate & its plexus is surrounded by the prostatic fascia.
- ❖ Denonvilliers' fascia – Posterior portion of the fascia which forms barrier between prostate & rectum.