



Prostate Cancer
Supportive Care

RECOGNITION AND MANAGEMENT OF TREATMENT RELATED SIDE EFFECTS OF ANDROGEN DEPRIVATION THERAPY(ADT)

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University of British Columbia



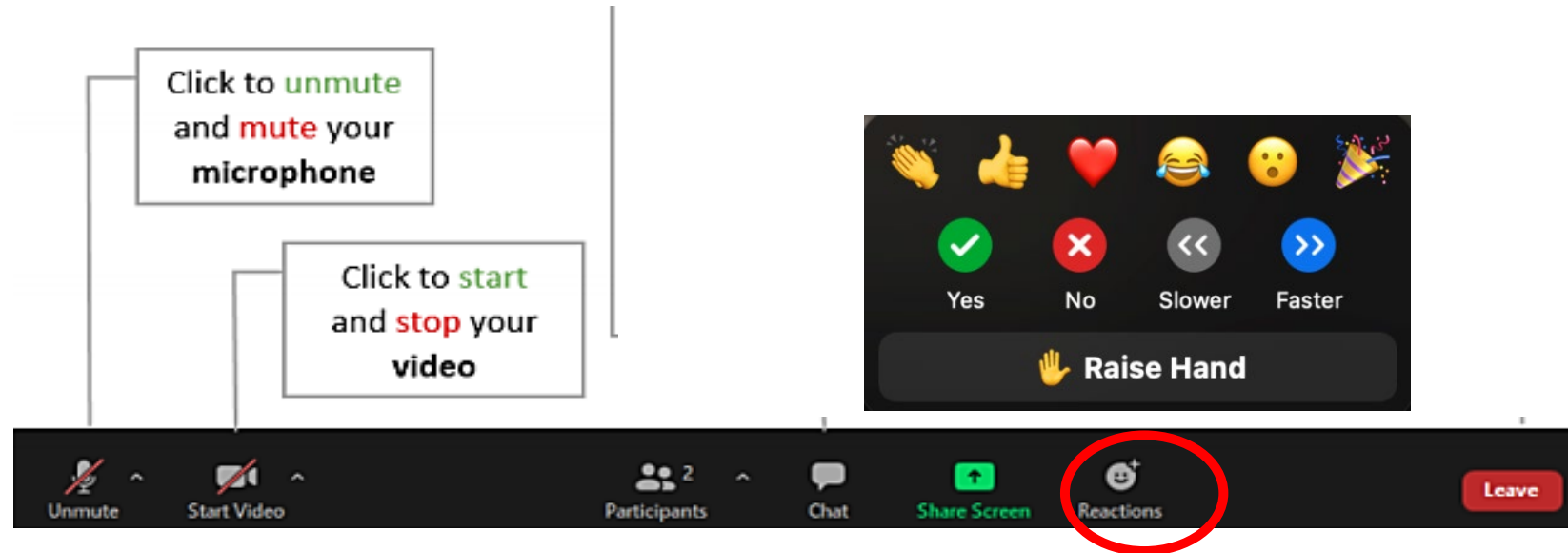
VANCOUVER
PROSTATE CENTRE
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VIRTUAL HEALTH

Participants at home,
please:

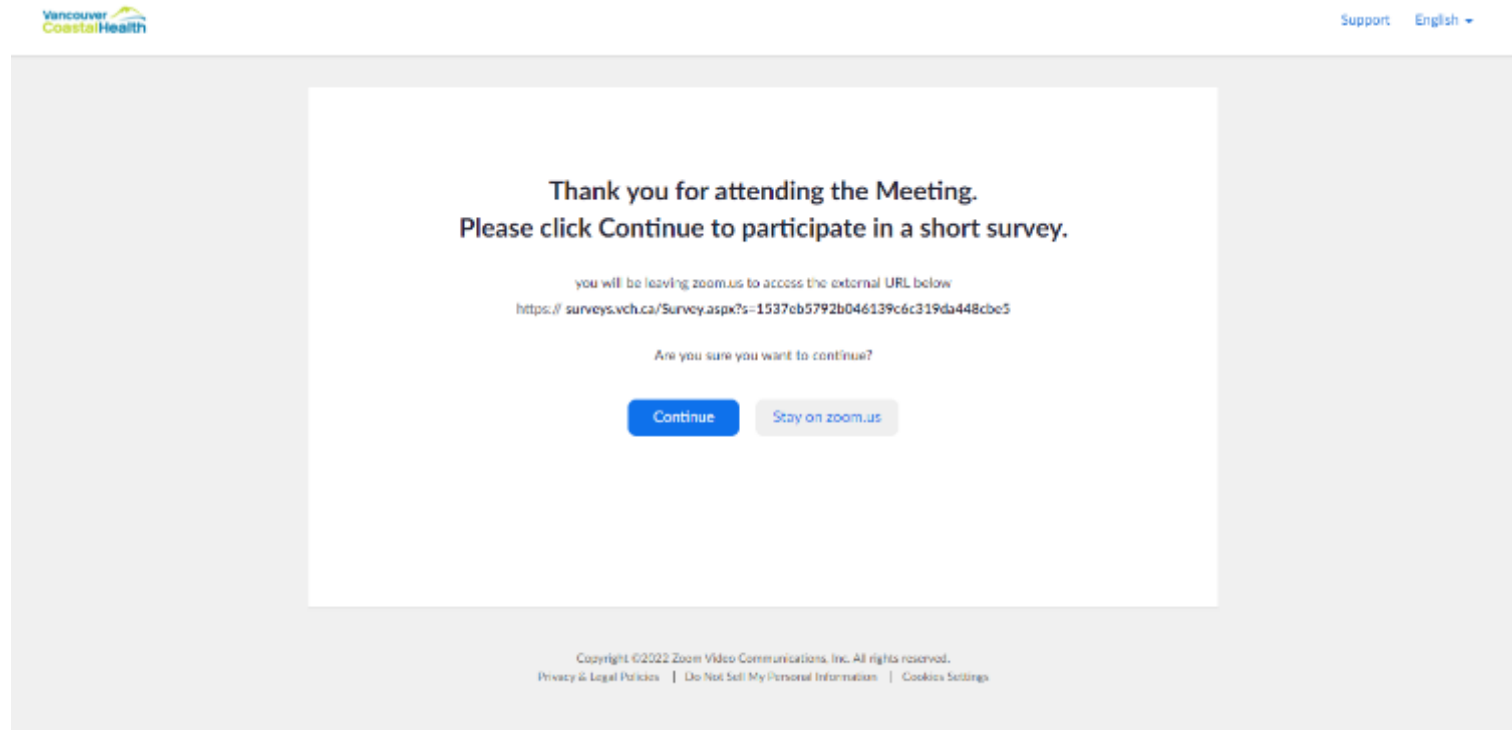
- Mute your microphone
- Use the 'Raise Hand' function to ask a question



To ask a question:

1. Click 'Reactions'
2. Click 'Raise Hand'

HELP US IMPROVE!



Please help us improve our education sessions by completing a feedback survey when you leave the Zoom call today!

FUNDING FOR PROSTATE CANCER SUPPORTIVE CARE PROGRAM

- The PCSC Program is primarily funded by philanthropic donations
- The PCSC Program also appreciates the past support from both government and non-government organizations.

SESSION ETIQUETTE

This is an information session:

- Medical concerns should be brought to your doctor
- Please respect the confidentiality of other attendees
- Please feel free to leave the room at any point if needed
- Please ask questions as they arise

THE PROSTATE CANCER SUPPORTIVE CARE (PCSC) PROGRAM

Our program designed to provide supportive care for both patients and their partners from the time of diagnosis onwards:

- This is both a supportive care program and a research initiative
- A set of “modules” or programs that provide supportive care beyond treating the cancer itself
- Most ‘modules’ in the program include preemptive and educational themes
- Patients choose modules of interest. We believe that knowledge is empowering and educational sessions can help answer questions and relieve stress

PROSTATE CANCER SUPPORTIVE CARE (PCSC) PROGRAM

The program is currently comprised of eight modules:

1. Introduction to Prostate Cancer & Primary Treatment Options
2. Managing the Impact of Prostate Cancer Treatments on Sexual Function and Intimacy
3. Movement & Exercise for Prostate Cancer Patients
- 4. Recognition & Management of Treatment Related Side Effects of Androgen Deprivation Therapy (ADT)**
5. Pelvic Floor Physiotherapy for Bladder and Bowel Concerns
6. Counselling Services
7. Metastatic Disease Management
8. Nutrition Advice for Prostate Cancer Patients

PCSC WORKSHOPS

- In-person **Couples Intimacy Workshop** delivered by Sexual Health Clinician and Clinical Counsellor
- Virtual **Mindfulness Workshop** delivered by Clinical Counsellor
- Virtual **Female Partners Roundtable** delivered by Sexual Health Clinician
- Virtual Roundtable for **Prostate Cancer Patients <60 Years Old** delivered by Sexual Health Nurse and Clinical Counsellor
- Virtual Roundtable for **Men Who Have Sex with Men (MSM)** by physiotherapists

****All dates can be found on www.pcscprogram.ca ****

**If you would like to register, please contact PCSC at 604-875-4485
or via email at pcsc@vch.ca**

INTRODUCTION TO ANDROGEN DEPRIVATION THERAPY (ADT)

- Prostate Cancer Overview
- Androgen Deprivation Therapy
- Treatment Options
- Side Effects and Management

PROSTATE CANCER OVERVIEW

- Prostate Cancer is a disease where some prostate cells lose control of their growth and division
- It is the most common cancer for Canadian men
- Often slow growing and treatable
- Advances in screening, testing, and treatment options improve prostate cancer outcomes



ANDROGEN DEPRIVATION THERAPY

- Testosterone is the main androgen (or male sex hormone)
- Prostate cancer cells are stimulated to grow by testosterone
- Dr. Huggins discovered that removal of the testicles (which produce testosterone) treated pain in men with metastatic prostate cancer
- In the 1980's, medical treatments with injections were shown to lower the testosterone level as much as surgical removal of the testicles



Charles B. Huggins
Nobel Prize in Physiology
or Medicine 1966

FUNCTIONS OF TESTOSTERONE

Skin

hair growth, sebum production

Muscle

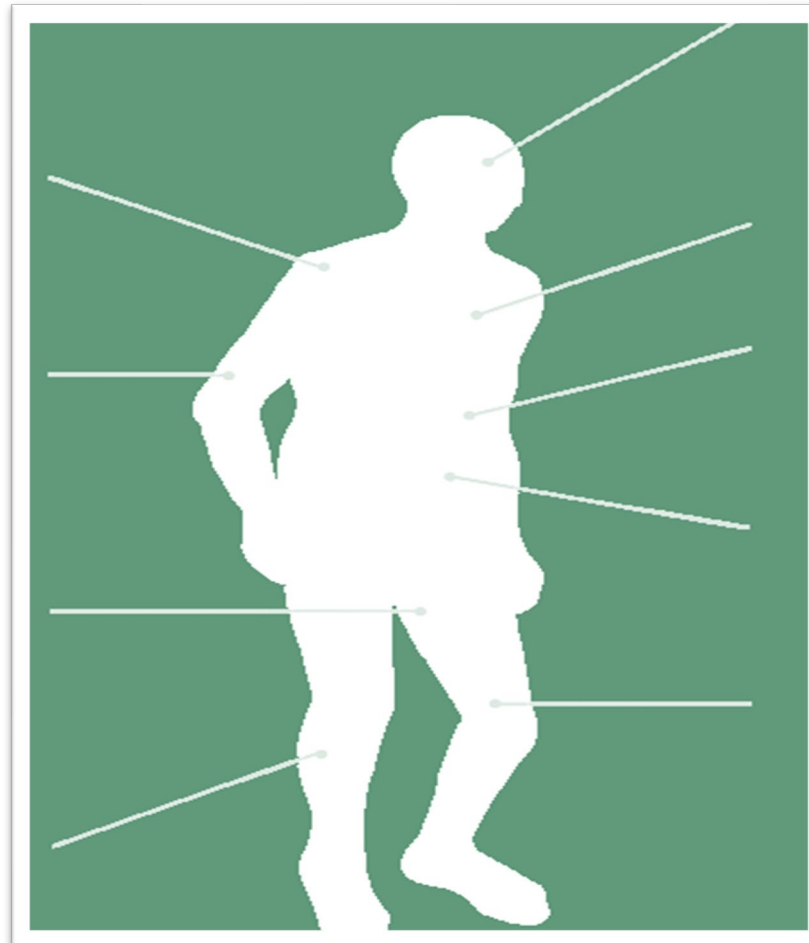
strength, volume, energy
reduction in visceral fat

Male sexual organs

penile growth
spermatogenesis, erection
prostate growth and function

Bone marrow

blood cell growth



Brain

libido, mood, cognition

Heart

cardiovascular health

Liver

protein synthesis

Kidney

stimulation of erythropoietin that stimulates red blood cell growth

Bone

strength and density

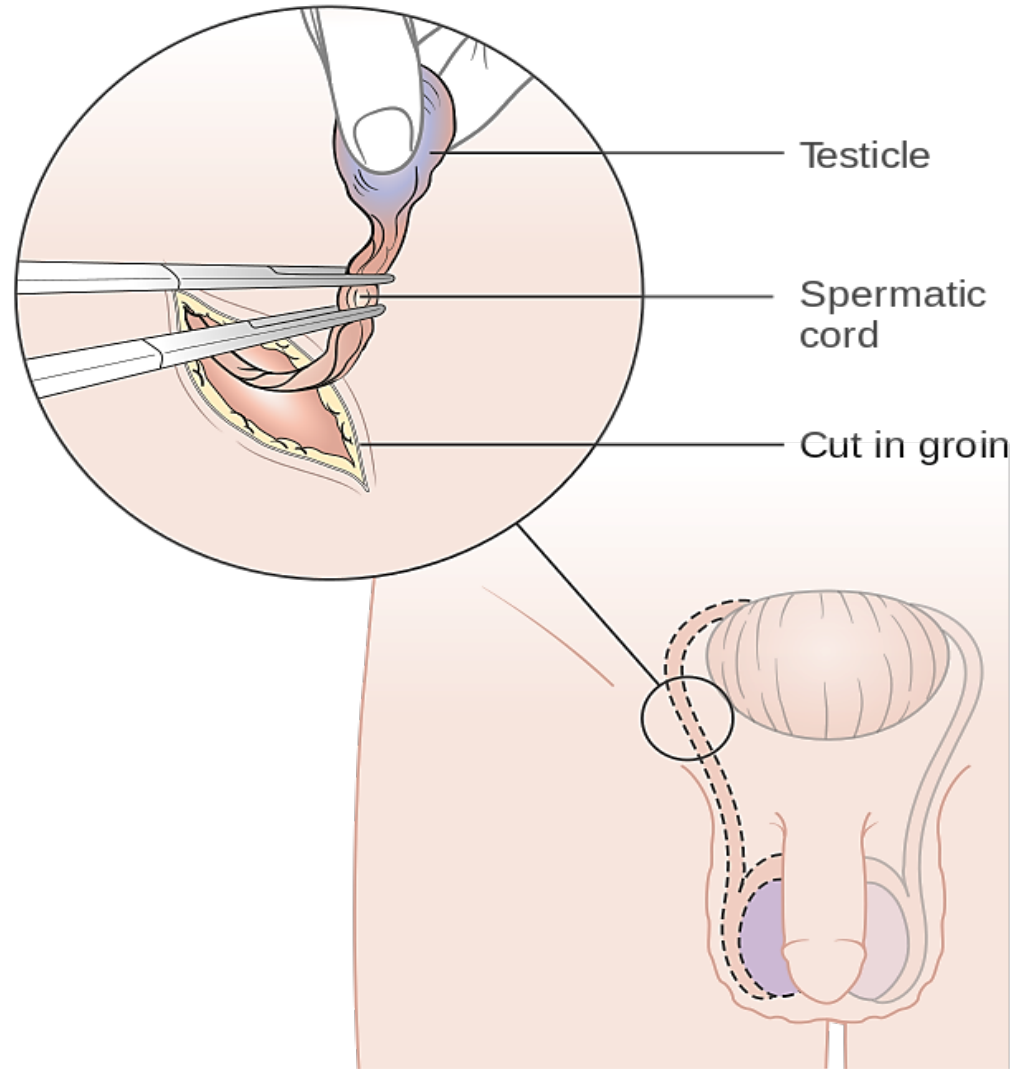
OPTIONS TO CONTROL TESTOSTERONE LEVELS

- **Surgery**
 - Orchiectomy
- **Human Luteinizing Hormone-Releasing Hormone (LHRH) Agonist**
 - Goserelin Acetate (Zoladex)
 - Leuprolide Acetate (Lupron or Eligard)
- **Human Luteinizing Hormone-Releasing Hormone (LHRH) Agonist**
 - Degarelix (Firmagon)
 - Relugolix (Orgovyx) oral
- **First Generation Non-Steroidal Anti-androgens**
 - Bicalutamide (Casodex)
 - Nilutamide (Nilandron)
 - Flutamide (Euflex)

OPTIONS TO CONTROL TESTOSTERONE LEVELS

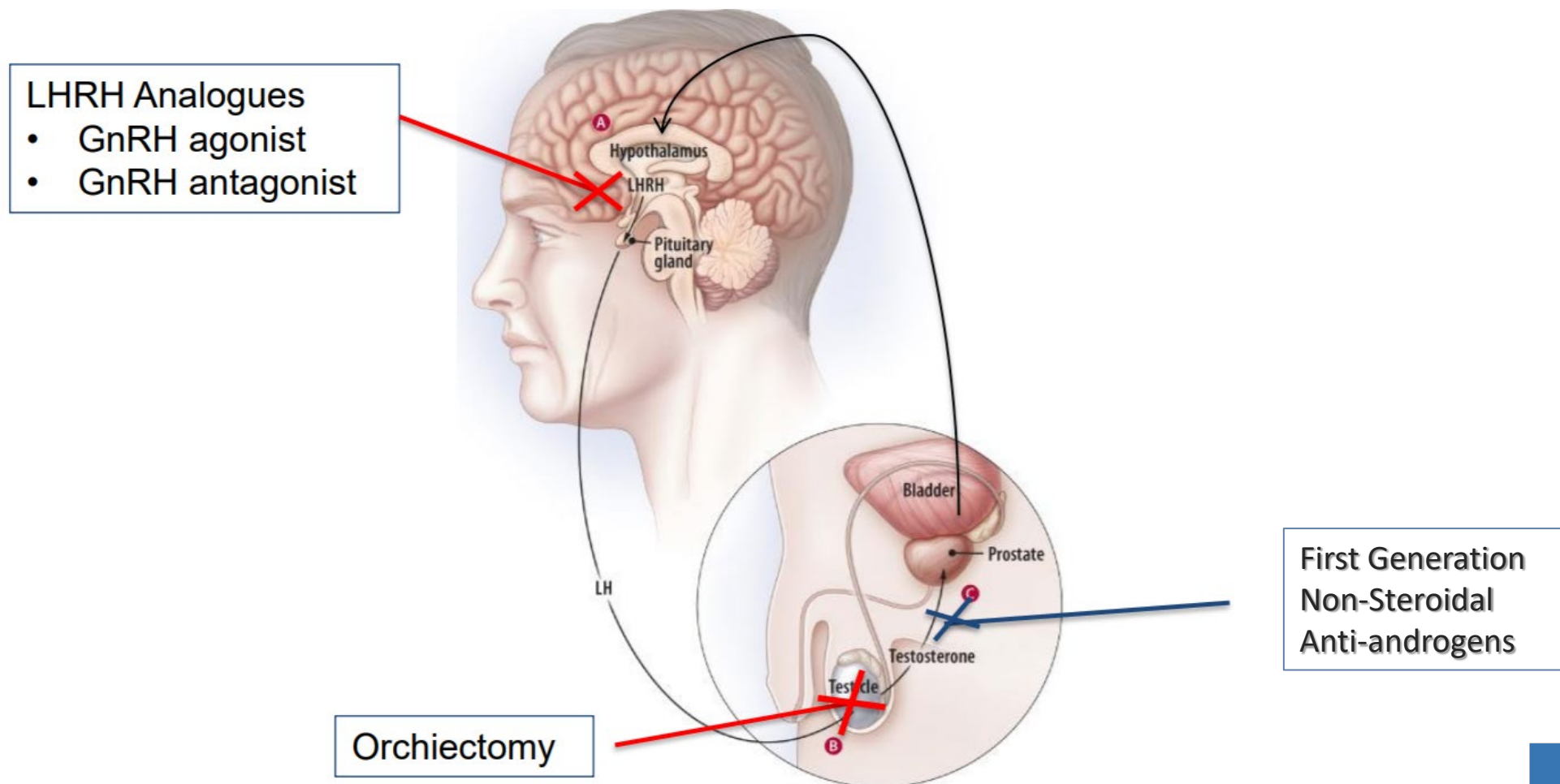
Orchiectomy

1. The surgeon will make a cut (incision) near the groin.
2. The testes are removed through the incision.
3. The incision is closed with stitches and covered with a dressing.



OPTIONS TO CONTROL TESTOSTERONE LEVELS

Androgen Deprivation Therapy



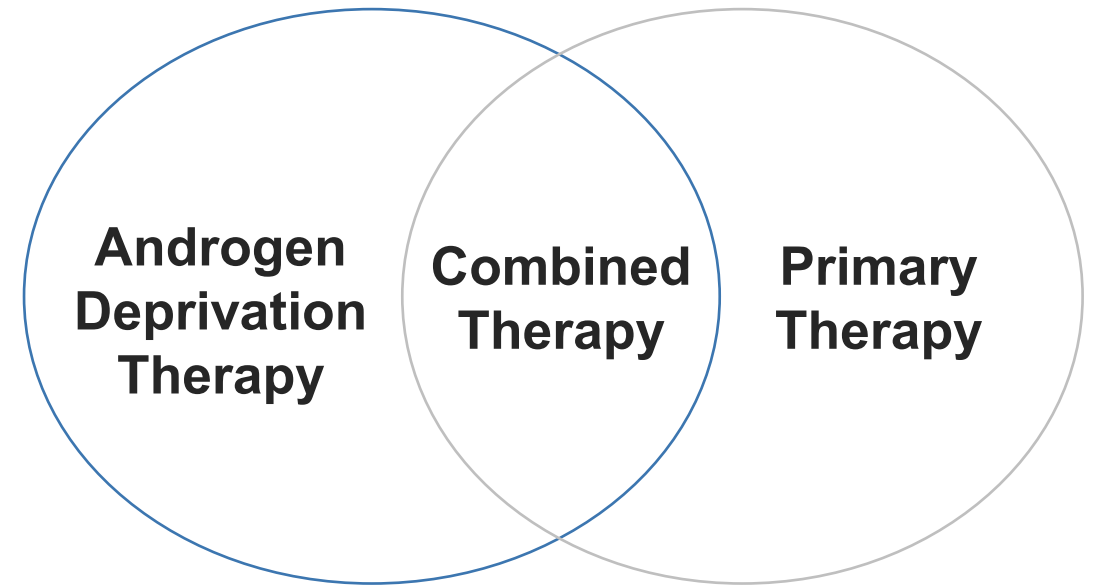
HOW DO THEY COMPARE?

Items	Surgical Castration	Medical Castration	
Procedure	Orchiectomy	LHRH Agonists	LHRH Antagonist
Castration	Irreversible	Reversible	Reversible
Castrate of level of testosterone	3-4 days	3-4 weeks	3-4 days
Testosterone flare	No	Yes	No
Prior Anti-Androgens	No	Yes	No
Local reaction	N/A	1%	40%
Administration	Once	3, 4, and 6 months	monthly
Cardiovascular complications	Similar?		
Psychologic preference	22%	78%	
Costs	Hundreds	Thousands	

PRIMARY THERAPY AND ADT SIDE EFFECTS

Androgen Deprivation Therapy

- Weight gain
- Loss muscle mass
- Gynecomastia
- Testicular atrophy
- Loss of body hair
- Hot flashes
- Fatigue
- Mood disturbances



Primary Therapy

- Urinary incontinence
- Climacturia
- Altered or painful orgasm
- Dry ejaculation

Combined Therapy

- Erectile dysfunction
- Penile shortening
- Low/no libido
- Depression
- Altered couple relationship
- Partner distress

SIDE EFFECTS OF ADT

What physicians commonly tell you

Loss of
libido
(sex drive)

Erectile
dysfunction

Hot flashes

LOSS OR LOWERING OF LIBIDO (SEX DRIVE)

- No magic pill to improve libido
- Lower libido is age related

How to enhance your libido?

Exercise

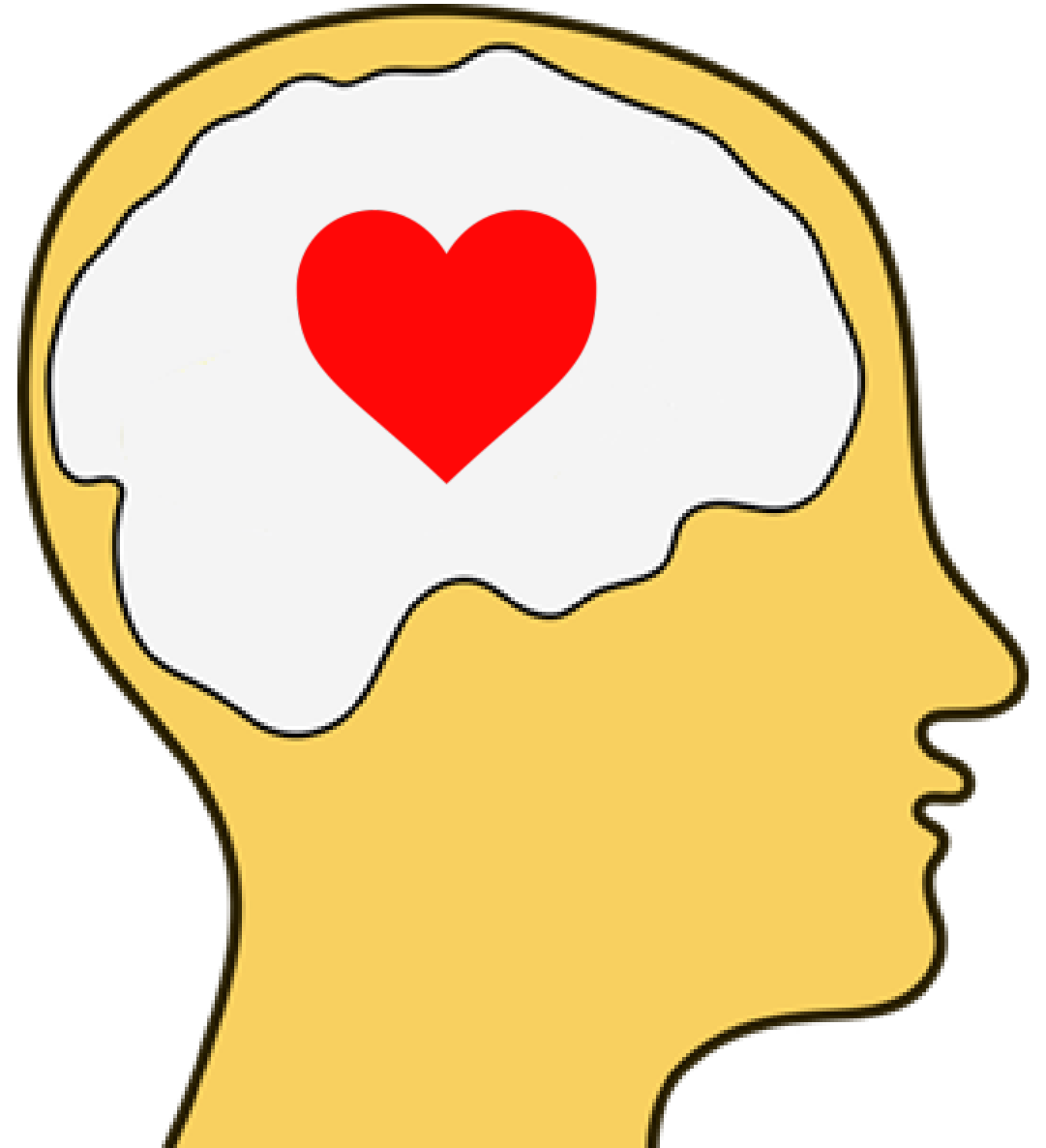
Enhance
Intimacy

Mindfulness

Sensate
Focus

Simmering

**Module 2: Managing the Impact
of Prostate Cancer Treatments
on Sexual Function and Intimacy**



ERECTILE DYSFUNCTION (ED)

ADT can lower your sex drive and cause ED

Erectile Dysfunction Treatments:

- Oral medications (e.g. Viagra or Cialis)
- Vacuum pump erection devices
- Penile injections



Incorporate couple-based coping and education
Psychological and/or relationship counseling

Note! It is still possible to orgasm without an erection

ERECTION=ERECTION, ORGASM=ORGASM, ERECTION≠ORGASM

HOT FLASHES

Commonly occur after the first 2 months of starting ADT

What worsens hot flashes?

- Diet: avoid alcohol, spicy food, and caffeine (coffee, tea, colas, chocolate...etc.)
- Heat: stay cool and hydrated
- Stress: try to relieve stress



What can help with my hot flashes?

- Wear sweat wicking material
- Sleep with layers that can be removed and use a fan
- Massage and acupuncture
- Follow a regular exercise program
- Relaxation and Cognitive Behavioral Therapy (CBT)

HOT FLASHES

Other things people try:

- Soy foods
- Flaxseed
- Vitamin E
- Black Cohosh
- Garlic
- Ginseng



Note! Always ask your doctor before trying a new supplement!



Medications:

- Gabapentin 300 mg at bedtime or 100 mg every 8 hours and titrate
- Venlafaxine (Effexor XR) 37.5mg – helps hot flashes *and* depressive symptoms

SIDE EFFECTS OF ADT

What physicians commonly tell you

What you see

Loss of libido
(sex drive)

Erectile dysfunction

Hot flashes

Weight gain

Gynecomastia
(increased breast tissue)

Loss of muscle mass
and strength

Shrinkage of penis and
testicles

Hair changes

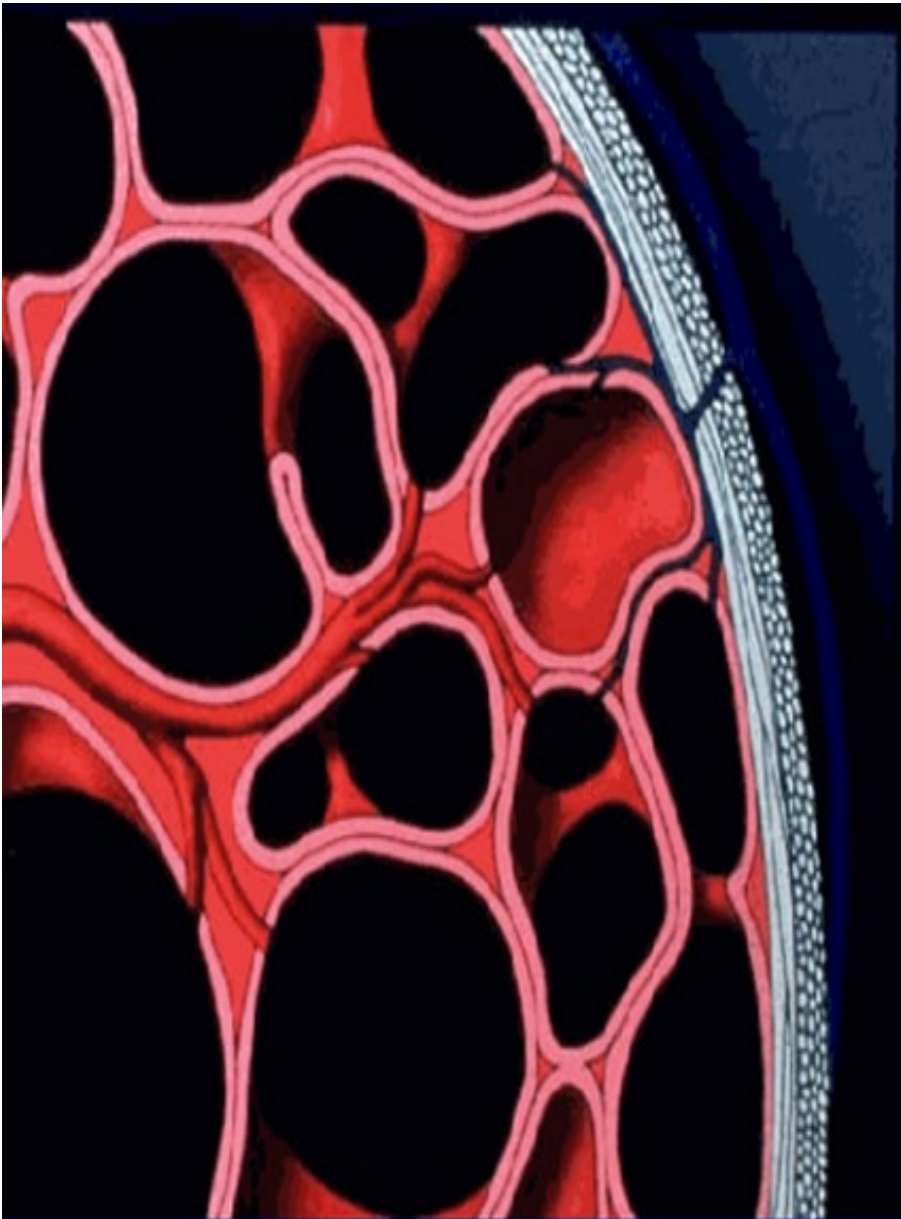


WEIGHT GAIN AND ASSOCIATED CHANGES

- More than 40% of men are overweight at diagnosis
- Common to gain up to 10 kg over 6-9 months due to increased appetite
- Increase in body fat especially at waist, hips, thighs
- Loss of muscle mass and strength
- Weight is difficult to lose even if ADT is stopped!
- Need to be physically active-aerobic and resistance exercise
- Engage in healthy lifestyle habits
- **Module 3 and Module 8 : Exercise and Nutrition**



SHRINKAGE OF PENIS AND TESTICLES



- Genital shrinkage: penis length, girth and testicular volume
- Apoptosis (cell death) of trabecular smooth muscle
- Impaired veno-occlusive mechanism
- Fibrotic changes
- Usually stops 12-18 months after starting ADT

Work with PCSC Sexual Health Clinician on
penile rehabilitation strategies
(Module 2)

HAIR CHANGES

- Thinning or loss of body hair on trunk, arms, legs
- Beard softer
- May or may not be bothersome
- Not a health issue although it can be distressing if not informed
- **Reversible if ADT is stopped!**



SIDE EFFECTS OF ADT

What physicians commonly tell you

What you see

What you don't see

Loss of libido
(sex drive)

Erectile
dysfunction

Hot flashes

Weight gain

Gynecomastia
(increased breast tissue)

Loss of muscle mass and
strength

Shrinkage of penis and
testicles

Hair changes

Loss of bone
density

Diabetes and
cardiovascular
disease

Metabolic syndrome



LOSS OF BONE DENSITY

- ADT lowers your bone mineral density (BMD) and causes an increased risk for fractures
- Many men already have low BMD before starting ADT
- Loss of muscle mass and strength increases the risk for falls and fractures
- Loss of BMD continues over time



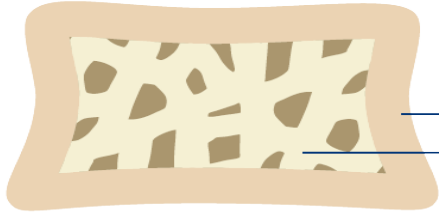
LOSS OF BONE DENSITY

- All patients on ADT need to ensure they are receiving adequate amounts of Calcium and Vitamin D
 - **1200 mg Calcium** (not to exceed 2000 mg/day)
 - **1000 IU Vitamin D** (not to exceed 4000 IU/day)
- *unless serum vitamin D levels are low and being followed by a physician
- Men with moderate to high risk of fracture at 10-years should be offered drug therapy
 - Denosumab (Prolia) 60mg SC every 6 months (Must have good dental hygiene!)
- Resistance exercises and high impact exercises help preserve BMD

LOSS OF BONE DENSITY

Inside your bones

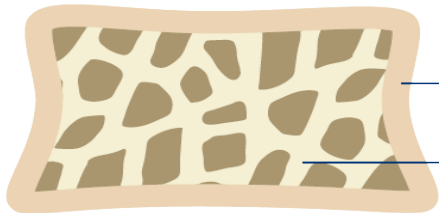
'Normal' bone density on a scan



This usually means your bones are strong because the cortical outer shell is thick and internal struts are thick and interconnected.

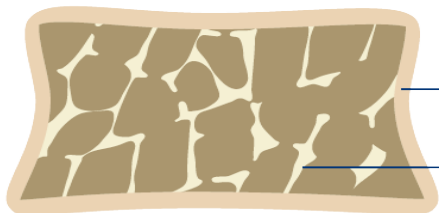
Low bone density on a scan (osteoporosis or osteopenia)

This means either:



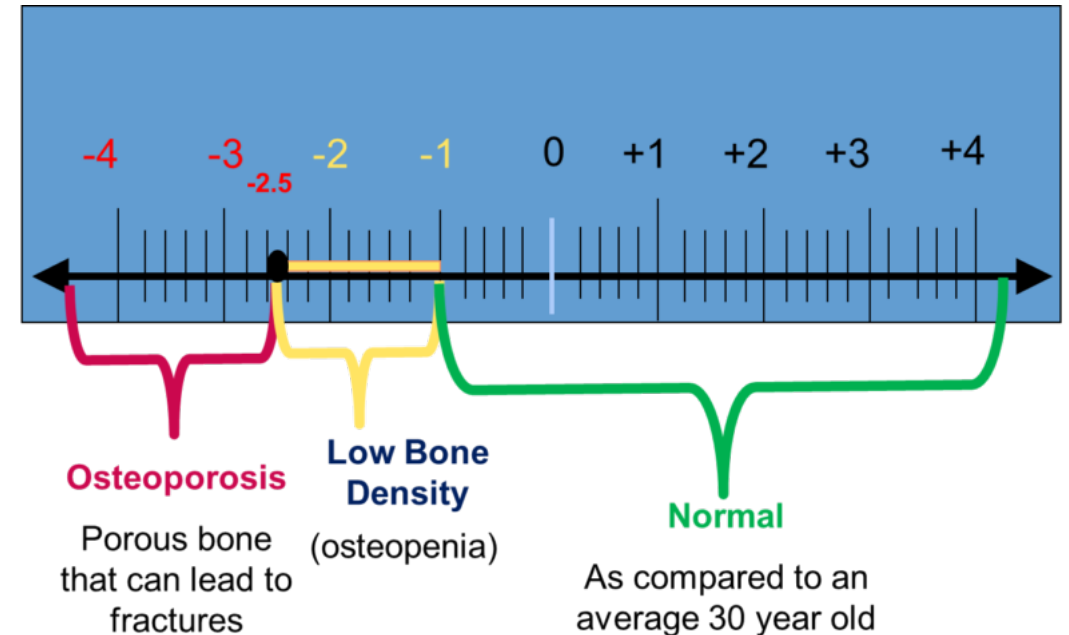
Your bones are still generally strong because, despite some thinning of the cortical shell and the internal struts, the structure is still intact or interconnected.

or:

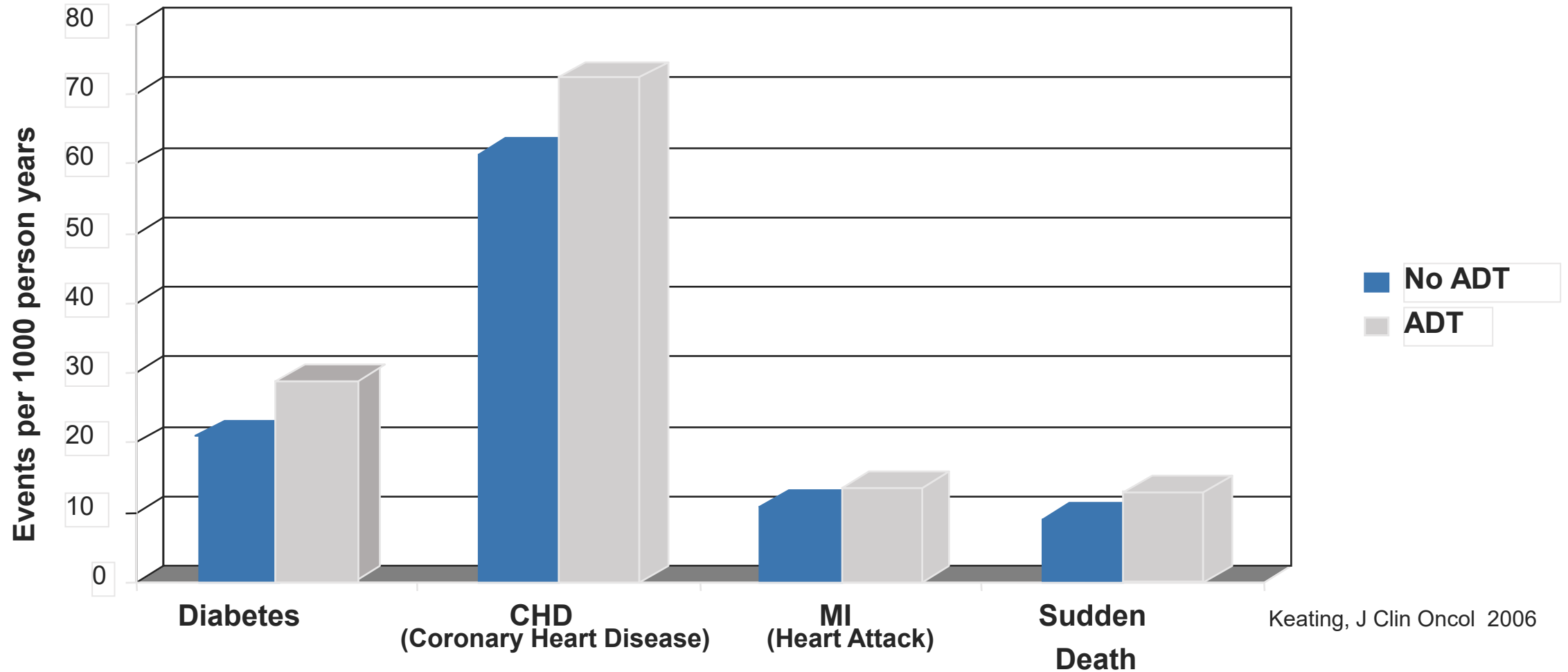


Your bones may have become fragile and at risk of breaking easily. This is because the cortical shell and internal struts have thinned and the structure has broken down with a loss of connections.

Bone density DEXA scan



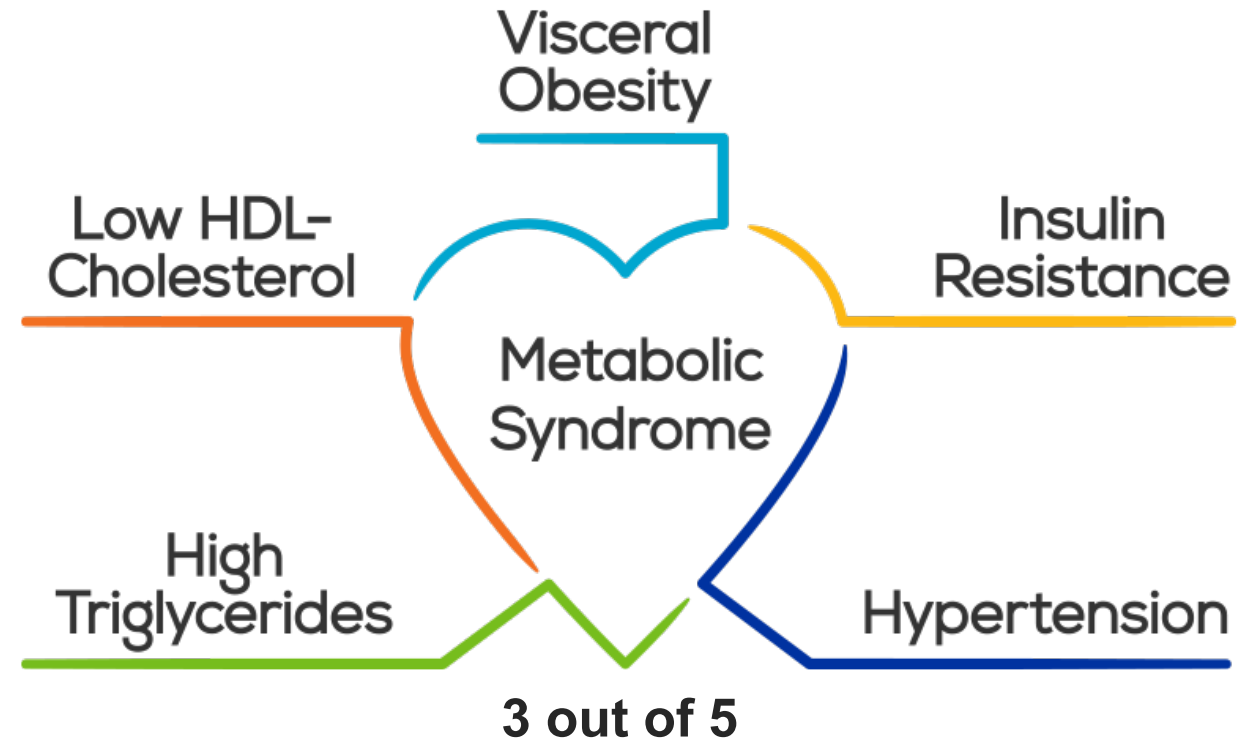
Diabetes and Cardiovascular Disease During ADT: Observational Study of 73,196 Men



- Patients with pre-existing cardiovascular disease (e.g. heart attack and/or congestive heart failure) are at increased risk for cardiovascular events when treated with ADT

METABOLIC SYNDROME

- Fat mass increases 10-20%
- Lean body mass decreases 2-3%
- Increased insulin levels within months
- Lipids increase in unpredictable ways
- Increases in blood pressure
- Increase in blood sugar levels
- Hemoglobin level could also decline on ADT on average to 125-130g/L (the mechanism is not clearly understood)



METABOLIC SYNDROME: **ABCDE** Approach

A

Awareness & Aspirin

- Talk to your doctor about Metabolic Syndrome
- Some patients may need to take Aspirin

B

Blood Pressure

- Do a baseline blood pressure and every year while on ADT

C

Cholesterol & Cigarette

- Ask your doctor to check your cholesterol levels
- Decrease or eliminate cigarette use

D

Diet & Diabetes

- Follow a healthy diet and monitor your weight
- Ask your doctor to check your blood sugar levels

E

Exercise

- 150 minutes per week of moderate-to-vigorous physical activity (aerobic exercise) + 2-3 resistance training sessions



SIDE EFFECTS OF ADT

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What you see

What you don't see

What you feel

Loss of libido
(sex drive)

Erectile
dysfunction

Hot flashes

Weight gain

Gynecomastia
(increased breast tissue)

Loss of muscle mass and
strength

Shrinkage of penis and
testicles

Hair changes

Loss of bone
density

Diabetes and
cardiovascular
disease

Metabolic syndrome

Muscle and Joint
aches

Depression and
emotional lability

Cognitive dysfunction

Fatigue, lack of energy,
lack of initiative



ADT-ASSOCIATED MUSCULOSKELETAL SYNDROME

- Muscle and joint aches and pains within 3 months of initiating ADT
- Could be associated with muscle wasting and tendons and ligaments thinning

Nonpharmacological

- Aerobic and resistance exercise
- Acupuncture x 2 per week and then x 6 weekly

Pharmacological

- NSAIDS 400 mg Advil x3 day for 5 days (if no contraindications) then 200-400 mg if needed
- Duloxetine (Cymbalta) 30 mg/day can increase to 60 mg/day if needed



DEPRESSION

- Acknowledge emotional lability is to be expected
- Major depression is seen in 13% of men on ADT and is 8 times higher than the general male population
- Prior history of depression is a risk factor
- Risk of depression increased with duration of ADT

Anti-depressant if needed

Exercise impacts mood in a positive way

Module 6: Counselling Services



COGNITIVE FUNCTION



- Impact on a small number of patients
- Typically affects spatial memory (e.g. where did I park the car?)

Counselling services (Module 6)

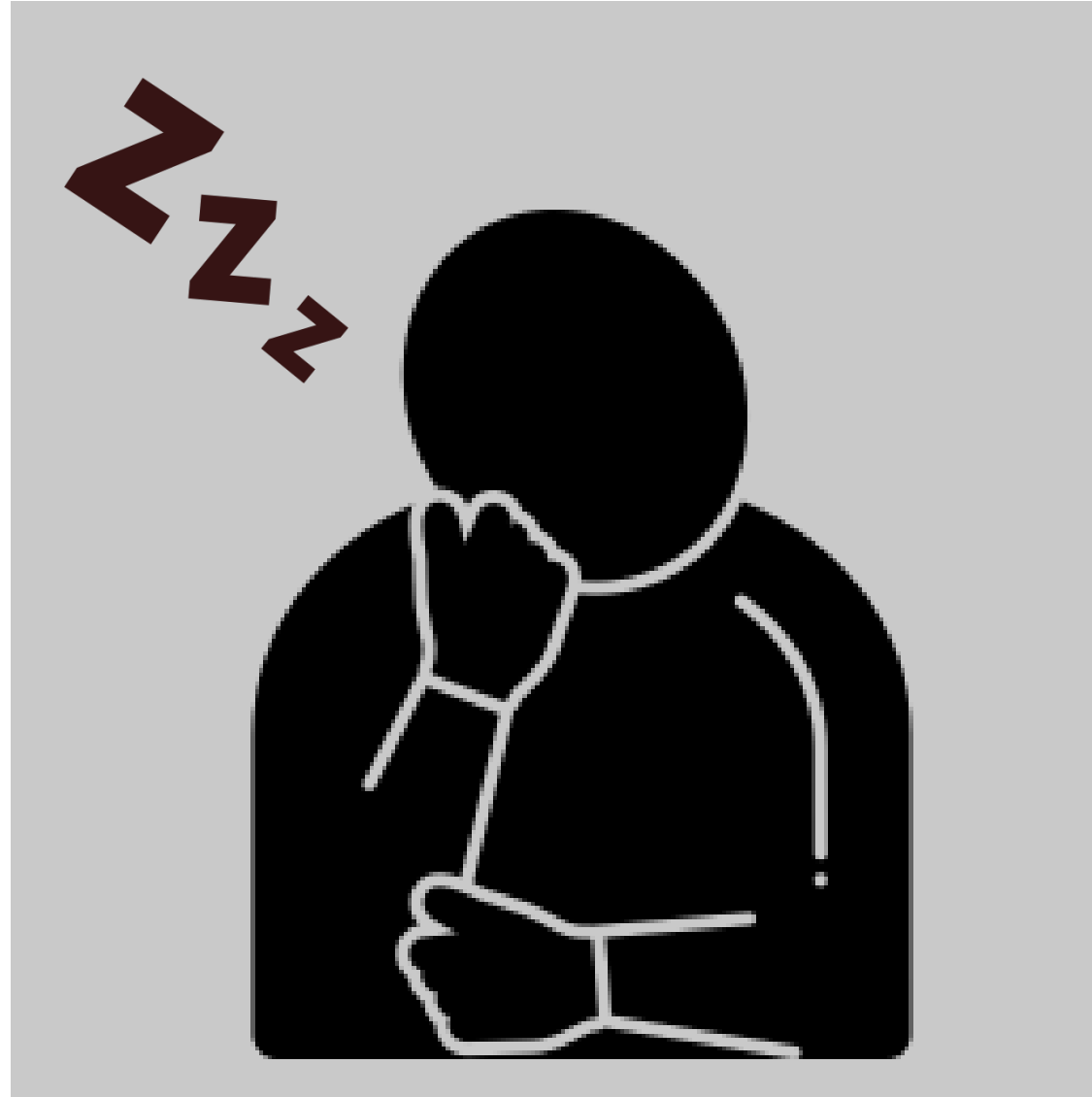
Exercise! (Module 3)

Reduce clutter in living space

Reduce alcohol and other depressants

FATIGUE

- Feeling of weariness, tiredness, or lack of energy that does NOT always improve with rest
- May affect your ability to do daily activities
- No medication is known to effectively reduce fatigue
- Exercising improves fatigue, social functioning, and mental health



FATIGUE

150 minutes per week of moderate-to-vigorous physical activity (aerobic exercise) + 2-3 resistance training sessions

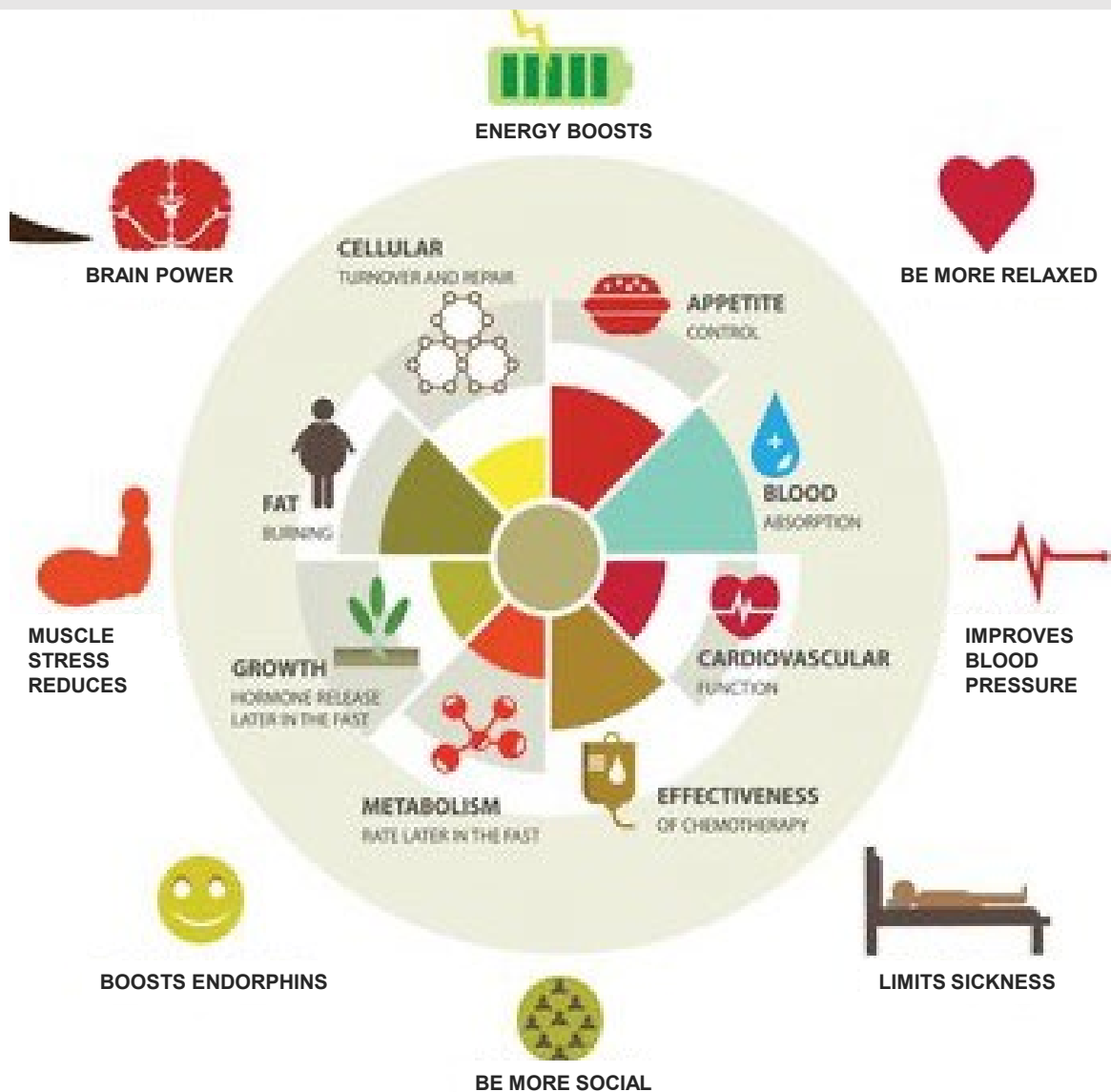
RPE Scale	Rate of Perceived Exertion
10	Max Effort Activity Feels almost impossible to keep going. Completely out of breath, unable to talk. Cannot maintain for more than a very short time.
9	Very Hard Activity Very difficult to maintain exercise intensity. Can barely breath and speak only a few words
7-8	Vigorous Activity Borderline uncomfortable. Short of breath, can speak a sentence.
4-6	Moderate Activity Breathing heavily, can hold short conversation. Still somewhat comfortable, but becoming noticeably more challenging.
2-3	Light Activity Feels like you can maintain for hours. Easy to breathe and carry a conversation
1	Very Light Activity Hardly any exertion, but more than sleeping, watching TV, etc

HEART RATE

Moderate Intensity
50 - 70%

Vigorous intensity
70 - 85%

OTHER BENEFITS OF EXERCISE



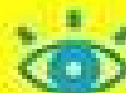
THE BRAIN BENEFITS OF EXERCISE



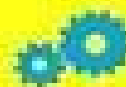
INCREASES PRODUCTION OF NEUROCHEMICALS THAT PROMOTE BRAIN CELL REPAIR



IMPROVES MEMORY



LENGTHENS ATTENTION SPAN



BOOSTS DECISION-MAKING SKILLS



PROMPTS GROWTH OF NEW NERVE CELLS AND BLOOD VESSELS



IMPROVES MULTI-TASKING AND PLANNING



Men'sHealth

TAKE HOME MESSAGES

Multiple Domains of Wellbeing for Survivors

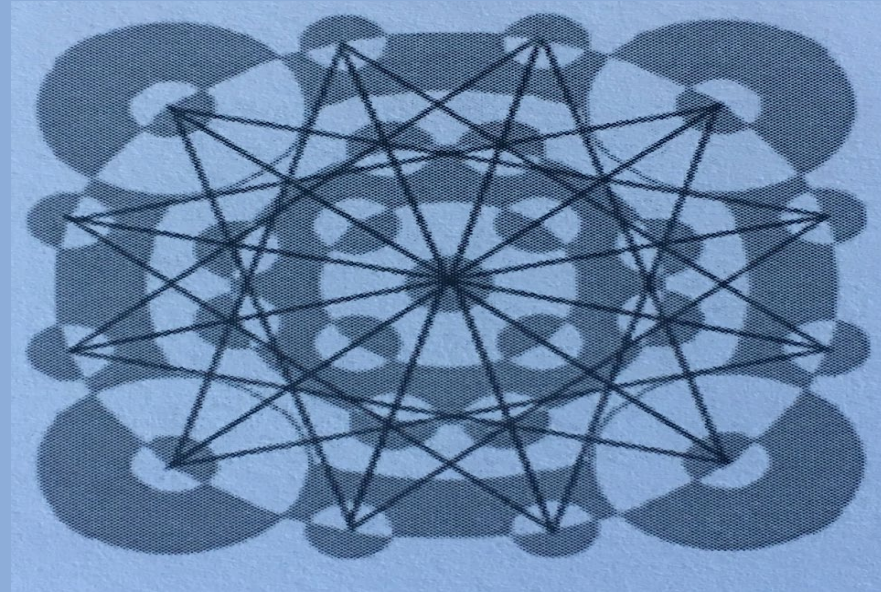
Physical

Fatigue
Sleep
Pain
Functional

Social

Family distress
Roles
Relationships
Work
Finances

Sexual



Psychological

Fear of recurrence
Loss of control
Anxiety
Depression
Cognition
Attention

Spiritual

Meaning
Hope
Inner strength
Transcendence

Adapted from Ferrell et al 1995, QOL in Long Term Cancer Survivors, Oncology Nursing Forum

TAKE HOME MESSAGES

- ADT can have many side effects
- Up to 20% of men DO NOT have any side effects 😊
- Dealing with side effects proactively is the best way to avoid long term problems with ADT
- Exercise and physical activity are the most effective treatments
- Patients must be active participants in prevention strategies
- The PCSC Program is here to help!

ADT CLINIC

- Need more information?
- Our ADT clinic offers one-on-one appointments with a Nurse Practitioner: Nikita Ivanov
- Appointments available via phone call
- Call 604-875-4485 to book an appointment



Nikita Ivanov
NP(F), MN-NP

THANK YOU!

QUESTIONS?

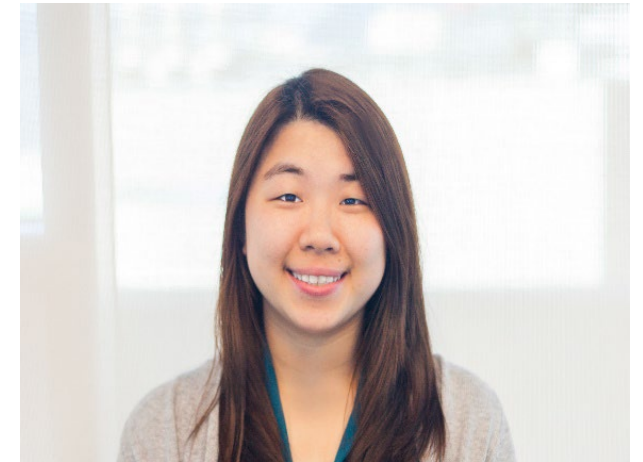
PCSC PROGRAM CONTACT DETAILS

Prostate Cancer Supportive Care (PCSC) Program
Gordon & Leslie Diamond Health Care Centre
Level 6, 2775 Laurel Street
Vancouver, BC
V5Z 1M9, CANADA

Patient inquiry form:



Judy Shih, MA
PCSC Program Coordinator
Telephone: 604-875-4485
Fax: 604-914-3003

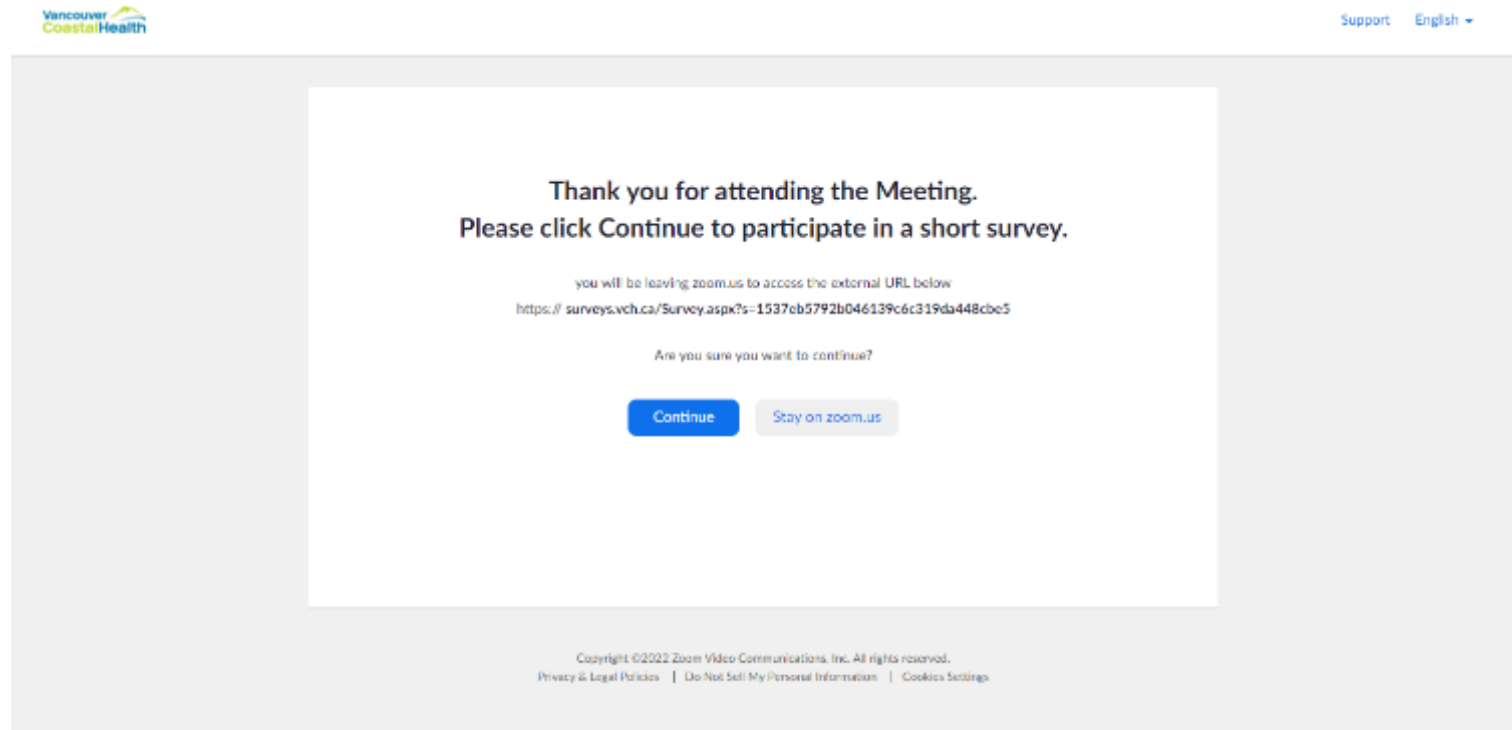


Email: pcsc@vch.ca
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