MEN’S HEALTH AFTER CANCER
WHAT YOU NEED TO KNOW:
ERECTILE DYSFUNCTION

THOMAS J. WALSH, MD, MS

JUNE 3RD, 2017
1. Define erectile dysfunction (E.D.)

2. Understand the association between E.D. and cardiovascular health

3. Understand why specific cancers and their treatment may cause E.D.

4. Develop a basic understanding of the treatments available for E.D.
## STATE OF MEN’S HEALTH

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High cholesterol</td>
<td>25%</td>
<td>28%</td>
<td>29%</td>
<td>30%</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>23%</td>
<td>25%</td>
<td>30%</td>
<td>32%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>10%</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Obesity</td>
<td>20%</td>
<td>25%</td>
<td>29%</td>
<td>32%</td>
</tr>
</tbody>
</table>

These key cardiovascular risk factors may also reflect the health of penile "hydraulics"

*Centers for Disease Control 2012 statistics*
What is ED?
The inability to maintain an erection firm enough to have sexual intercourse

How common is it?
• ~1 in 5 American men ≥ 20 years old
• Over 30 million American men
30% of men will experience erectile dysfunction

The risk of E.D. and its severity increase with age
ED: WHO DOES IT AFFECT?

Severity of Erectile Dysfunction

- None
- Mild
- Moderate
- Complete

Age (years):
- 40
- 45
- 50
- 55
- 60
- 65
- 70

0% 50% 100%

UW Medicine
ERECTION EXPLAINED

Deep dorsal v.

Emissary v.

Circumflex v.

Cavernous a.

Tunica albuginea of cavernosum

Urethral a.
1. Impaired bioavailability of Nitric oxide (NO)
2. Oxidative stress (free radical damage) interferes with NO.

ENDOTHELIAL DYSFUNCTION

General Cardiovascular system

- Precedes atherosclerosis
- Caused by vascular insults
  - Diabetes
  - Tobacco smoking
  - Hyperlipidemia
  - Hypertension

Maas et al, Vasc Med, 2002
ARTERIAL DIAMETER

- Penile arteries: 1-2 mm
- Coronary arteries: 3-4 mm
- Carotid arteries: 5-7 mm
- Femoral arteries: 6-8 mm

Montorsii et al, Eur Urol, 2003
PROSTATE CANCER PREVENTION TRIAL

4,247 men WITHOUT ED or known CARDIOVASCULAR DISEASE at the start of the trial

7 years of follow-up
65% developed ED

Men with new ED had increased risk of heart attack or angina HR=1.4 (95%CI 1.1, 1.8)

As strong a risk factor as smoking, family history, and dyslipidemia

Thompson IM, et al. Erectile Dysfunction and Subsequent Cardiovascular Disease. JAMA 294(23): 2996-02, 2005
THE CAUSES OF ED

- Vascular: 40%
- Diabetes: 30%
- Medications: 15%
- Other: 1%
- Neurological: 5%
- Pelvic Surgery or Radiation: 6%
- Hormonal: 3%
- Other: 1%

UW Medicine
IMPACT OF PELVIC SURGERY AND RADIATION

[Diagram showing pelvic anatomy with labels for Dorsal nerve, Pelvic plexus, Pudendal nerve, and Cavernous nerves]
TREATMENT: GOAL-BASED THERAPY

1. Education
2. Counseling
3. Lifestyle/medication change
4. Hormonal replacement
5. Oral medications
6. Vacuum device
7. Suppositories
8. Injections
9. Penile implants

Modifiable Factors

Oral Agents Counseling Education

Local Therapies

Surgery

Goals Achieved

UW Medicine
TREATMENT: A TYPICAL CLINIC PLAN

Visit 1
- Your story and exam
- Additional testing or cardiovascular risk assessment?
- Medication?

Visit 2
- Did it work?
- More advanced therapy?

Visit 3
- Did it work?
- More advanced therapy?
TREATMENT

Oral therapy works. Until it doesn’t.

✓ Re-challenge with same agent

✓ Switch to another medication

✓ Try a different approach.

1McCullough, et al, Urology, 2002; Atiemo, J Urol. 2003
PDE ISOENZYMES IN THE MALE BODY

PDE  1  Heart, lung, brain, vascular smooth muscle
PDE  2  Adrenal cortex, brain, heart, olfactory
PDE  3  Pancreas, smooth muscle, platelets, heart, fat
PDE  4  Brain, lung, lymphocytes
PDE  5  Corpus cavernosum
PDE  6  Retina
PDE  7  Skeletal muscle, lymphocytes
PDE  8  Testis, eye, liver, skeletal muscle, heart
PDE  9  Kidney
PDE 10  Testis, brain
PDE 11  Testis, skeletal muscle, prostate, kidney
INTRA-URETHRAL ALPROSTADIL (MUSE)

UW Medicine
INTRACAVERNOSAL INJECTION
VACUUM ERECTION DEVICE
HOW DOES IT WORK?
<table>
<thead>
<tr>
<th>Time</th>
<th>Mechanical survival</th>
<th>Patient satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year</td>
<td>98%</td>
<td>98%</td>
</tr>
<tr>
<td>5 years</td>
<td>89%</td>
<td>99%</td>
</tr>
<tr>
<td>10 years</td>
<td>79%</td>
<td>99%</td>
</tr>
<tr>
<td>15 years</td>
<td>71%</td>
<td>98%</td>
</tr>
</tbody>
</table>

① Every man can have his erectile function restored
② Don’t give up, this is fixable
③ Don’t neglect heart health and its role in sexual function
④ See a specialist - ask your doctor
YOUR QUESTIONS
THANK YOU

Thomas J. Walsh, MD, MS
walsht@uw.edu
Appointments  206.598.6358
Nurse  206.598.0358
Cell 206.660.7634