Breast and Prostate Cancer
Different Organs, but Similar Cancers

• Breast and Prostate cancers have many things in common
  – Both cause about the same number of deaths every year, although men with prostate cancer tend to be older than women with breast cancer
  – Usually hormone-dependent, meaning these cancers grow faster in the presence of hormones
    • Breast – estrogen
    • Prostate – testosterone/androgens
  – Having a faulty BRCA1 gene means 5 times increased risk of breast cancer for women, and 4 times increased risk of prostate cancer for men

• Here in Wisconsin, about 1/3 of all cancers are hormonally related cancers!
Hormones and Breast cancer

• For women – exposure to false estrogen, called “xenoestrogens” can significantly increase risk of breast cancer

• These environmental compounds are not estrogen, but can trigger estrogen receptors in the body to act like estrogen (remember, some types of breast cancer grow faster in the presence of estrogens or xenoestrogens)
# Examples of environmental toxins and xenoestrogens

<table>
<thead>
<tr>
<th>Compound</th>
<th>What is it?</th>
<th>Where is it found?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dioxin</td>
<td>Chemical used to bleach cotton (carcinogen)</td>
<td>Tampons</td>
</tr>
<tr>
<td>Paraben</td>
<td>Preservative (xenoestrogen)</td>
<td>Deodorant, Cosmetics, Moisturizers</td>
</tr>
<tr>
<td>Aluminum Salts</td>
<td>Shrinks sweat glands (xenoestrogen/metalloestrogen)</td>
<td>Antiperspirants</td>
</tr>
<tr>
<td>Galaxolide</td>
<td>Synthetic musk (xenoestrogen/hormone disruptor)</td>
<td>Perfume, soap, detergent, air freshener</td>
</tr>
<tr>
<td>Bisphenol-A or BPA</td>
<td>Building block of plastic and resin (xenoestrogen)</td>
<td>Plastic food packaging, thermal receipts, water and liquid drinking bottles</td>
</tr>
<tr>
<td>Perchloroethylene or PERC</td>
<td>Dry cleaning solvent (carcinogen)</td>
<td>Dry cleaning facilities, metal degreasing</td>
</tr>
</tbody>
</table>
For men, connection between testosterone levels and prostate cancer is less well understood

- Early studies found that high testosterone increased risk
- Newer research suggests it may be LOW testosterone levels which are associated with increased risk of prostate cancer
- Researchers are still looking at the connection
Reduce Your Risk of Breast or Prostate Cancer

• Reduce your toxin burden
• The Environmental Working Group BodyBurden Study found 176 chemicals in human volunteers: 76 caused cancer in humans or animals, 94 were toxic to the brain and nervous system, and 79 caused birth defects or abnormal development
  – Eat organic food when possible
  – Reduce or eliminate the chemicals you use especially:
    • Pesticides
    • *Synthetic fragrances* (found in detergent, candles, air fresheners, lotions – anything marked with “fragrance” or “parfum” on the label)
    • *Harsh cleaning solutions*
      – Did you know? One part white vinegar to 9 parts water kills 90% of bacteria and mold spores and is MUCH healthier for you!
Other ways to reduce your cancer risk

• Iodine
• Curcumin
• Omega-3 fatty acids
• Vitamin D

Let’s look at these in more detail...
Iodine

- Iodine has been shown to alter breast cancer associated gene expressions
  - Turns off cancer promoting genes & turns on genes that promote cancer cell apoptosis (cellular destruction)
- Iodine makes breast cells less sensitive to estrogen
- Iodine detoxifies the toxic halogens (bromide, fluoride, chloride)
- Low iodine levels have also been connected to prostate cancer
- **Iodized salt is not sufficient for supplementing iodine**
- Iodine experts recommend 6.25 - 12.5 mg of iodine or more daily
  - 100 times greater than our RDA
  - This is the estimated individual intake among Japan’s population
    - Japan has the lowest rates of thyroid, prostate, & breast cancer
Curcumin

• Curcumin is one of nature’s most powerful anti-inflammatories
• Why does that matter for cancer?
• Inflammation
  – generates free radicals, which can damage cellular DNA = cancer
  – triggers cell reproduction (proliferation) to create replacement cells, sometimes causing both healthy AND damaged (cancerous) cells to replicate

• Not only does curcumin stop inflammation, it has also been shown to stop cancer cells at all three stages of cancer formation
  – Stops cancer cells from forming
  – Stops cancer cells from growing
  – Stops cancer cells from spreading to other areas of the body
Curcumin After Radiation

• 95% of breast cancer patients experience dermatitis (skin inflammation and redness) caused by radiation treatments

• Researchers believe that curcumin may be able to prevent skin damage associated with radiation therapy

• 30 patients with non-inflammatory breast cancer took 6 g of curcumin (orally) or a placebo daily during their radiation treatment
  – Radiation dermatitis severity (RDA) scores were taken weekly - on a scale of 0-4 the mean score was
    • Curcumin users: 2.6
    • Placebo users: 3.4
  – Curcumin also appeared to reduce the risk of skin peeling which affected
    • Curcumin users: 28.6%
    • Placebo users: 87.5%
Omega-3 fatty acids

• Omega fatty acids from fish have many benefits for cancer prevention and treatment
  – Reduce overall risk of cancer
  – Help with cancer-related weight loss

• Women with the highest intake of omega-3 from marine sources were 14% less likely to develop breast cancer compared to those with the lowest intake
Omega-3 & Prostate Cancer

• In the News: “Fish Oils Supplements Raise Prostate Cancer Risk by 71%”

• Flaws in this study and the way it has been reported:
  – Participants were not given fish oil supplements
  – This was not an experiment or a clinical trial, it was an observational study looking at what things are found together
    • In this case, “high” DHA levels and prostate cancer
  – Researchers also found that high trans fat levels were linked to a lower risk of prostate cancer
    • As some have pointed out, by this finding we should skip fish and just eat donuts
  – Additionally, 80% of the men were overweight, and large numbers of them smoked, regularly consumed alcohol, and had close relatives who also had prostate cancer

• In conclusion, the VAST MAJORITY of research shows omega fatty acids are beneficial so do not stop taking omega fatty acids because of terrible reporting on this study.