A Natural Approach to Prostate Cancer Care

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Natural Approach to Prostate Cancer

- Prostate cancer: an overview.
- Natural Approaches: lifestyle factors for breast and prostate cancer.
- Natural Approaches: nutriceutical support for breast and prostate cancer (Part 2).
- Natural Approaches: general herbal medicine support (Part 2).
- Natural Approaches: specific herbal medicine prostate cancer support.
- Case Study 2

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Prostate Cancer: an overview
Prostate Cancer: an overview

- Prostate cancer is the most commonly diagnosed male cancer in UK.
- Accounts for 23.90% of cancer diagnosed in men.
- In 2008, 37,051 new cases of prostate cancer diagnosed in the UK.
- 899,00 new cases of prostate cancer diagnosed in whole world in 2008.

Sources: Cancer Research UK and World Cancer Research Fund
Prostate Cancer: an overview

Source: Cancer Research UK
Prostate Cancer: an overview

- Man has 1 in 9 chance of developing prostate cancer in his lifetime.
- Incidence increasing with time in all age groups.
- Prostate cancer incidence increasing most quickly in younger patients (45-54 y/o range) – clinically rare 30 years ago – some due to better diagnosis (PSA test).
- Incidence decreasing in 75-84 and 85+ y/o age groups.

Sources: Cancer Research UK and World Cancer Research Fund
Prostate Cancer: an overview

Sources: Cancer Research UK for 2007-2009
Prostate Cancer: an overview

Sources: Cancer Research UK for 2007-2009
Prostate Cancer: an overview

- Various different kinds of prostate cancer are known.

- Most commonly diagnosed is adenocarcinoma (formed from glandular cells).

- Various subtypes of adenocarcinoma:
  - Acinar (most common)
  - Mucinar
  - Prostate duct (PDA)
Prostate Cancer: an overview

- Prostate Cancer is generally histologically shown to have androgen receptors (AR) on their cell surface, which are activated by testosterone and more strongly by dihydrotestosterone (DHT).

- Unlike breast cancer, almost all prostatic adenocarcinomas over-express the production of AR, at least initially.
Prostate Cancer: an overview

- Main orthodox treatments for Prostate Cancer are:
  - Surgery.
  - Radiotherapy (direct or brachytherapy).
  - Hormone therapy (Zoladex, Prostap, Casodex, Abiraterone, Diethyl stilbestrol).
  - Chemotherapy (almost always docetaxel).
- Newer treatments such as Photodynamic Therapy (PDT), High Intensity Focussed Ultrasound (HIFU) and Radiofrequency Ablation (RFA) are currently being researched for the treatment of early Prostate Cancer without the need for surgery.
Prostate Cancer: an overview

- Type of treatment(s) given depend upon:
  - The type of Prostate Cancer.
  - The stage of the Prostate Cancer (TNM (Tumour, Nodes and Metastasis)).
  - The grade of the Prostate Cancer (Gleason score (2-10)).
  - The PSA reading.
  - Family history (BRCA-1 and BRCA-2 genes).
  - Whether the cancer is new or a recurrence.
Prostate Cancer: an overview

- Today, we will be focusing on the natural treatment of prostate cancer.
- However, most of the prostate cancer patients we see will decide to have one or more conventional treatments.
- For example, approximately 10% have surgery, 30% radiotherapy (for early disease) or hormone therapy for metastatic disease (~57%).
Prostate Cancer: an overview

- As for breast cancer, we can give information and supporting herbs and nutriceutical supplements to patients who either:
  - Wish to undergo some or all of the orthodox treatments suggested by their oncologist – work in an integrated way.
  - Do not wish to undertake any conventional treatments, but instead wish to try complementary therapies.
Natural Approaches to Breast and Prostate Cancer: lifestyle factors – 10 key steps
Lifestyle Factors

1) **Food should be eaten slowly** and chewed thoroughly to ensure optimum digestion and extraction of nutrients.

2) **Avoid drinking large volumes of water with meals** as impairs proper digestion, absorption and assimilation.

3) ↓ **alcohol** (liver/oxidative stress). Best cut out totally (the small amount in herbal tinctures is safe).

4) **Cessation of smoking** (liver, GIT, reduced immunity). Essential otherwise nothing will work well.
5) Cessation of all recreational drugs.

6) ↓ exposure to xenotoxins from household cleaners, make-up, antiperspirants, hair products (shampoo, conditioner, dyes).

- Replace with safe alternatives.
- Avoid exposure to organic solvents: acetone (nail varnish remover), paint.
- ↓ electromagnetic pollution???
Lifestyle Factors

7) **Body mass index (BMI) between 19 and 24** e.g. [www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx](http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx). There are better indicators (hip-waist ratio, electronic resistance), but this method easiest.

8) **Sleep**: ensure 6-8 hours good sleep per night for good Natural Killer cell and general immunity. Maximises self-healing potential.

9) **Regular, gentle exercise** aids circulation, toxin clearance and boosts immune system, energy and mood.
Lifestyle Factors

- Walking, yoga, swimming and running all useful - ↑ oxygen, blood circulation and lymphatic drainage. No swimming just after surgery, during chemotherapy or radiotherapy.

- Regular exercise is essential for health and will improve bone density and protect from heart disease.

- People who exercise have been shown again and again to have better outcomes from cancer treatments.

Lifestyle Factors

10) **Stress:** key part of any anticancer regime.

- Positive visualisation* and transcendental meditation shown to be useful against cancer by reducing stress levels and aiding self-healing response. I have found TM very useful with some patients. [http://www.meditationtrust.com/](http://www.meditationtrust.com/)


- Qi gong and yoga.

* [www.meditationexpert.co.uk; www.personal-potential.co.uk](http://www.meditationexpert.co.uk; www.personal-potential.co.uk);*
Natural Approaches to Breast and Prostate Cancer: nutriceutical support (part 2)
6) **Maitake (and other medicinal mushrooms)**

- Extracted from mushroom *Grifola frondosa*.
- Rich in unique many-branched β-glucans hence orally active.
- Enhances immune system (NK cells and Tc cells) surveillance.
- Stimulates white blood cell production in bone marrow.

Nutriceutical Support

6) Maitake (and other medicinal mushrooms)

- ↑ apoptosis of cancer cells.
- ↓ metastasis.

- Profound anti-tumour effect – routinely given in combination with conventional chemotherapy in China and Japan.

- Lower doses of chemotherapy needed while protecting healthy cells from damage.
6) Maitake (and other medicinal mushrooms)

- Dose: 1000 mg three times/day 30 minutes before food

- Possible side effects

- Generally few – caution in people with mushroom sensitivities.
7) *n-3 fatty acids*

- Increasing evidence from animal and *in vitro* studies that EPA and DHA inhibit carcinogenesis.
- Similar evidence for ALA.
- Greatly boost innate and adaptive immune system.

7) *n*-3 fatty acids

*n*-3 fatty acids modulate:

- Eicosanoid production and inflammation.
- Angiogenesis.
- Cell proliferation.
- Apoptosis.
- Gene expression.
- Oestrogen metabolism.
- Insulin sensitivity.
- Membrane fluidity.
7) **n-3 fatty acids**

- *n*-3 FAs supplementation slows cancer growth, including resistant mammary cancers in laboratory animals.

- Chemotherapy and radiotherapy more effective with high intake of *n*-3 FAs.

- *n*-3 FAs reduce cancer-associated cachexia and improve quality of life.
Nutriceutical Support

7) **n-3 fatty acids**

- In one study, chemotherapy was more effective for breast cancer for women with highest levels of *n*-3 FAs.

- **Author’s conclusions:**
  
  - “In combination with standard treatments, supplementing the diet with *n*-3 FAs may be a non-toxic means to improve cancer treatment outcomes and may slow or prevent recurrence of cancer”

  - “Used alone, an *n*-3 FA supplement may be a useful alternative therapy for patients who are not candidates for standard toxic cancer therapies”

Nutriceutical Support

7) **n-3 fatty acids**

- **Possible side effects**
  - Can cause belching, wind, bloating, nausea and diarrhoea initially.
  - Very high doses can cause persistent fishy odour.
  - Use in caution with patients on anticoagulants and platinum-containing chemotherapy regimes (??).
  - Caution with diabetics (≤2000 mg - ↓ blood sugar control - ?).
Nutriceutical Support

8) Quercetin

- Most active flavonoid – normally consume ~25 mg/day from fruit/vegetables. Potent antioxidant.
- Suppresses mutant p45 production, ↑ apoptosis.
8) **Quercetin**

- Breast cancer, quercetin causes cancer cells to produce type II oestrogen receptors (ER II) and binds to them blocking them – unique mechanism.

- By blocking these receptors, quercetin stops growth signals from being produced, thereby stopping the cell from dividing.
8) **Quercetin**

- The more ER II the cell produces in response to quercetin, the more sites there are for quercetin to attach itself to and greater the degree of tumour suppression.

- It is thought that this mechanism also translates to other oestrogen-sensitive cancers e.g. cervical, some ovarian and uterine cancers.
8) **Quercetin**

- Has demonstrated antitumour activity against many cancers in experimental models e.g. breast, lung, skin, prostate, ovaries, colon, rectum and brain.

- In humans, ER II is found in all the cancers mentioned as well as in some leukaemias.

- Enhances the effects of some chemotherapy drugs while reducing side effects.
8) Quercetin


- ↓ IGF-1 levels and ↑IGFBP3 – increases apoptosis in prostate and sarcoma cells (Vijayababu et al. *J Carcinogen* 2006; 5:10-39). ILF-1 has anti-apoptotic action that allows cancer cells to grow unchecked.
Nutriceutical Support

8) **Quercetin**

- Dose 500 mg three times a day, 30-60 minutes before food.
- Absorption increased if taken with bromelain.

**Possible side effects**

- None known or expected as does not affect normal cells in adverse way.
- Can interfere with action of some chemotherapy drugs such as doxorubicin and possibly epirubicin.
Nutriceutical Support

9) **Turmeric**

- Contains antioxidant curcumin, similar in activity to vitamins C and E.
- Powerful anti-inflammatory – similar in mode of action to aspirin.
- Depurative.
- Liver stimulant.
- Antimicrobial.
- Antimitotic.
Nutriceutical Support

9) Turmeric

- Inhibits formation of carcinogens by gut bacteria.
- ↑ natural defence systems i.e. glutathione production.
- ↑ detoxification by liver.
- ↓ production of COX-2 and reversibly inhibits COX-2.
- Inhibits EGF receptor: ↓ proliferation.
- Inhibits angiogenesis by blocking FGF and VEGF.
Nutraceutical Support

9) **Turmeric**

- Inhibits NF-κb.
- Inhibits tyrosine kinases (which control cell division).
- Inhibits mutant nuclear p53 protein.
- ↑ production of normal nuclear p53 protein, ↑ apoptosis.
- Inhibits telomerase production.
9) **Turmeric**

- Dose 500 mg (of extract containing 95% curcuminoids – equivalent to 15 g of turmeric spice), three times a day, 30-60 minutes before food.

- Bromelain and piperine increase bioavailability.

- Promising work on liposomal and on α-lipoic acid complexes boosting bioavailability.
9) **Turmeric**

- **Possible side effects**
  - Use with caution if history of gallstones.
  - Can cause hypersensitivity to sunlight.
  - Can cause slight hair thinning with prolonged use.

- **Possible interactions:**
  - May potentiate actions of antiplatelet and anticoagulant medicines.
Nutriceutical Support

9) **Turmeric**

- **Possible interactions**
  - Anticoagulants/Antiplatelets: Turmeric may increase risk of bleeding.
  - Doxorubicin: Turmeric inhibits doxorubicin-induced apoptosis of breast cancer cell lines in vitro.
9) **Turmeric**

- **Possible interactions (cont)**
  - Cyclophosphamide: Dietary turmeric inhibits cyclophosphamide-induced tumour regression in animal studies.
  - Drugs metabolized by CYP3A4 enzyme: Curcumin inhibits cytochrome 3A4 enzyme, altering the metabolism of some prescription drugs.
  - Drugs metabolized by CYP1A2 enzyme: Curcumin inhibits cytochrome 1A2 enzyme, affecting the metabolism of certain prescription medicines.
  - Drugs metabolized by CYP2A6 enzyme: Curcumin enhances cytochrome 2A6 enzyme, and can affect the metabolism of certain prescription drugs.
10) **Vitamin C**

- Pauling advocated vitamin C for cancer.
- Observational studies have also linked higher vitamin C diet with reduced risk of breast cancer.
- 500 mg or more of vitamin C daily over a period of 6 years was not associated with reduced incidence of breast cancer.
- High dose intravenous vitamin C has some research backing up its use for advanced cancers.
Nutraceutical Support

10) **Vitamin C**

- First and most effective line of antioxidant defence – water soluble.
- Improves immune function.
- Protects cells and DNA from ROS damage.
- Crucial for toxin detoxification.
- Inhibits formation of carcinogenic nitrosamines.
Nutriceutical Support

10) **Vitamin C**

- Dose 1000-6000 mg per day P.O. – larger doses IV (30-100 g).
- **Possible side effects**
  - Stomach irritation, diarrhoea, cramping in some patients at higher doses.
  - Very high doses can interfere with selenium and copper absorption and cause kidney stones in susceptible people.
  - High doses could theoretically interfere with chemotherapy and radiotherapy.
11) Vitamin \( \text{D}_3 \)

- Essential for proper immune function.

- As hormone interacts with endocrine system in the control of cancer development, proliferation and metastasis.

- High doses been shown to stimulate apoptosis in breast and prostate cancer cells.

- Recent studies have connected higher vitamin \( \text{D} \) levels with a lower incidence of cancer of the breast.
Nutriceutical Support

11) **Vitamin D$_3$**

- 115,096 breast, colon or prostate cancer cases, diagnosed 1964-1992 investigated, which resulted in 45,667 deaths.

- Diagnoses during summer and autumn, seasons with highest vitamin D levels, resulted in lowest risk of death.

- Results suggest that high vitamin D level at time of diagnosis, and thus, during cancer treatment, may improve prognosis.

Nutriceutical Support

11) **Vitamin D₃**

- Up to 5000 IU per day with food.

- **Possible side effects**
  - Theoretical increase risk of kidney stones with high doses.
  - Can cause hypercalcaemia, particularly in patients with bone metastases.
12) **Vitamin E**

- Potent anti-inflammatory.
- Most important fat-soluble antioxidant in body.
- Protects cell membranes from ROS.
- Needed for use of selenium and vitamin K.
- Essential for normal immune system functioning (T cells).
- Antitumour effects.
12) **Vitamin E**

- **Dose:** 250-800 mg per day with food (higher dose for fighting cancer) with food.

- Ensure natural form – *d*-α-tocopherol.

**Possible side effects**

- Higher doses can cause nausea and reduce vitamin A absorption.

- ? – patients on anticoagulants.
Natural Approaches: general herbal medicine support (Part 2)
General Herbal Support

To support patients against cancer we need to concentrate on:

- ↓ inflammation.
- ↑ immunity and immune surveillance.
- ↓ local congestion
- ↑ lymphatic drainage.
- ↑ detoxification.
- ↑ body resistance and vitality.
- ↓ stress levels and ↑ coping mechanisms.
### General Herbal Support

**Herbs with anticancer activity (Part 2)**

1. *Actaea racemosa*
2. *Boswellia serrata*
3. *Glycyrrhiza glabra*
4. *Panax ginseng*
5. *Rehmannia glutinosa*
6. *Scutellaria baicalensis*
7. *Serenoa repens*
8. *Silybum marianum*
9. *Thuja occidentalis*
10. *Urtica dioica* radix
11. *Viola odorata*
1) *Actaea racemosa* (black cohosh)

- Anti-inflammatory.
- Hormone modulator.
- Phytoestrogenic.
- Vasodilatory.
- Anti-cancer activity documented
  - Main active constituents: triterpene glycosides (actein, cimicifugoside, racemoside) isoflavones, resins, ranunculin.
1) *Actaea racemosa* (black cohosh)

- Recent research shows has anti-proliferative action on prostate cancer cells *in vitro* and *in vivo* (Seidlová et al. *Planta Med.* 2006; 72(6):521-6).

- Thought to be due to activation of aryl hydrocarbon receptors (AhR) in prostate adenocarcinoma, which blocks androgen receptor signalling (Jarry et al. *Phytomedicine*. 2005; 12(3):178-82).

General Herbal Support

1) *Actaea racemosa* (black cohosh)

- Directly inhibits $5\alpha$-reductase *(Seidlová & Wuttke et al. Maturitas. 2006; 55:S75-82).*

- Inhibits androgen-sensitive and -insensitive cells by apoptosis and activation of caspases (which degrade CK18) *(Hostanska et al. Anticancer Res. 2005; 25(1A):139-47).*

- One report that may cause increase growth of bone metastases in prostate cancer in a mice model. Unlikely relevant to human use, and opposite effect in other studies.
General Herbal Support

1) *Actaea racemosa* (black cohosh)

- **Possible side effects:**
  - Rare GI irritation in some individuals.

- **Possible interactions:**
  - Unlikely to interact with ER in ER +ve breast cancer, but use with caution.
2) *Boswellia serrata* (Indian frankincense)

- Anti-inflammatory and analgesic.
- Antioxidant.
- Anti-cancer activity well documented.

- Main active constituent boswellic acids.
2) *Boswellia serrata* (frankincense)

- Anti-inflammatory activity primarily due to inhibition on 5-LOX 
  *(Int J Phyto 2010. 2(1); 94-99).*

- However also down-regulates iNOS, IL-1β and TNF 
  *(Int Immunopharm 2007. 7(4); 473-482; Phytomedicine 2010. 17(11); 862-867).*

- NF-κB, TNF and IL-1β also inhibited by incensol acetate 
  *(Mol Pharmacol 2007. 72(6); 1657-1664; Clin Pharmacokin 2011. 50(6); 349-369(21)).*
2) *Boswellia serrata* (frankincense)

- Role in brain cancer treatment important e.g.
  a) Breast cancer brain metastasis (*J Neuro-Oncol* 2007, 82(1), 91-93). 44 y/o patient:

  ![Before treatment](image1)
  <---
  ![10 weeks after treatment](image2)

- Patient still clear of cancer four years after treatment (still on maintenance dose of *Boswellia* extract).
2) *Boswellia serrata* (frankincense)

- Dose essential as poor bioavailability.
- For therapeutic action need 400-800 mg of boswellic acids per day (boswellic acids make up ~30% of resin by weight).

**Possible side effects:**
- Rare GI irritation in some individuals.

**Possible interactions:**
- Unknown.
General Herbal Support

3) *Glycyrrhiza glabra* (liquorice)

- Anti-inflammatory.
- Adrenal tonic.
- Phytoestrogen.
- Demulcent

- Active constituents: glycyrrhizin, liquiritin, sterols, polysaccharides.
General Herbal Support

2) *Glycyrrhiza glabra* (liquorice)


- Glycyrrhetinic acid and liquorice extract reduced proliferation and PSA secretion in prostate cancer cells (*Journal of Pharmacy and Pharmacology*, 60: 661–666).
2) *Glycyrrhiza glabra* (liquorice)


2) *Glycyrrhiza glabra* (liquorice)

- **Possible side effects:**
  - Mild laxative effects in some patients.

- **Possible interactions:**
  - Contraindicated for long term use in some patients with hypertension.
3) *Panax ginseng* (Korean ginseng)

- Adaptogen.
- Immunomodulator.
- Anticancer.
- Anti-inflammatory.

- Active constituents: Triterpenoid saponins (ginsenosides) and polyacylenes A-K).
3) *Panax ginseng* (Korean ginseng)

- Much evidence for anti-cancer activity, though trials are limited.


- Other research suggests that ginsenosides Rg3 and Rh2 both active (Kim et al. *Arch Pharm Res.* 2004; 27(4):429-35).
3) *Panax ginseng* (Korean ginseng)


3) *Panax ginseng* (Korean ginseng)

- **Possible side effects:**
  - Hypertension.
  - May aggravate insomnia and asthma.

- **Possible interactions:**
  - Contraindicated with stimulants such as excessive caffeine.
  - May interfere with antiplatelet and anticoagulant drugs.
  - Some monoamine oxidase inhibitors (Nardil).
4) Rehmannia glutinosa (Chinese foxglove)

- Anti-inflammatory.
- Adrenal tonic.
- Used in TCM as part of some Anticancer treatments.

- Active constituents: Iridoid glycosides (jioglutosides, rehmaglutins, jioglutins) and other glycosides.
4) **Rehmannia glutinosa** (Chinese foxglove)

- Most research as part of TCM combinations such as Shi-quandada-bu-tang *(Methods Find Exp Clin Pharmacol 1992. 14(9), 725-36)*.

- Immuno-tumouricidal activity *(Chinese J of Pharmacol and Toxicol 1993. 02)*.

General Herbal Support

4) *Rehmannia glutinosa* (Chinese foxglove)

- **Possible side effects:**
  - None known.

- **Possible interactions:**
  - None known.
5) *Scutellaria baicalensis* (Baical skullcap)

- Anti-inflammatory.
- Antioxidant.
- Antimicrobial.
- Used in TCM as anticancer treatment.
- Was constituent of PC-SPES.

- Active constituents: flavonoids and their glycosides (baicalin, baicalein, wogonoside, wogonin).
General Herbal Support

5) *Scutellaria baicalensis* (Baical skullcap)


General Herbal Support

5) *Scutellaria baicalensis* (Baical skullcap)

- **Possible side effects:**
  - Contraindicated in cold conditions.

- **Possible interactions:**
  - Interferon therapy.
General Herbal Support

6) *Serenoa repens* (saw palmetto)

- Anti-inflammatory.
- Anti-prostatic.
- Anti-androgenic.

- Active constituents: short chain fatty acids, phytosterols and flavonoids.
6) *Serenoa repens* (saw palmetto)


General Herbal Support

6) *Serenoa repens* (saw palmetto)

- **Possible side effects:**
  - None known.

- **Possible interactions:**
  - None known.
General Herbal Support

7) *Silybum marianum* (milk thistle)

- Hepatoprotective.
- Hepatic trophorestorative.
- Antioxidant.
- Digestive tonic.
- Antioxidant.

- Active constituents: silymarin (a mix of flavanolignans).
General Herbal Support

7) *Silybum marianum* (milk thistle)

- Silymarin has COX-2 and LOX inhibiting activity and is anti-inflammatory *(Phytomed 2000. 7; 21-24; J Pharm Pharmac 1996. 48; 968-70).*

- Inhibits iNOS gene expression by inhibiting NF-κB in human macrophages and prostate cancer cells *(J Pharm Exp Therap 2002 302; 138-44; Oncogene 2002; 3727-78).*

- Down-regulates EGFR production *(Integr Cancer Ther 2007 6 (2); 130-145).*

- Anti-angiogenic effect on various cancers *(J Surg Res 2003 113 (1); 133-138; Eur J Cancer 2003 39, 2403–2410).*
General Herbal Support

7) *Silybum marianum* (milk thistle)


- Demonstrated synergistic action with chemotherapy drugs cisplatin and doxorubicin.
General Herbal Support

7) *Silybum marianum* (milk thistle)


- “Milk thistle extracts are now under intense study in the experimental therapeutics of cancer for chemoprevention, treatment, and amelioration of chemotherapy side effects.” (Integr Cancer Ther 2007. 6(2), 110-9).

- Currently in Phase 1 clinical trials.

- Dose and form important as oral bioavailability poor.
7) *Silybum marianum* (milk thistle)

- **Possible side effects:**
  - Can cause mild laxative effect initially.

- **Possible interactions:**
  - May interfere with liver metabolism of some chemotherapy drugs – theoretical – no evidence. Latest research suggests not a significant effect.
General Herbal Support

8) *Thuja occidentalis* (white cedar)

- Immunomodulator.
- Antimicrobial.
- Anti-inflammatory.
- Alterative.
- Astringent.
- Expectorant.
- Antimitotic.

- Active constituents: thujone, isothujone flavonoids, tannins.
8) *Thuja occidentalis* (white cedar)

- Traditional Native American use in treating cancer adopted by eclectics for enlarged prostate, uterine cancer and colorectal cancer (Ellingwood).

General Herbal Support

8) *Thuja occidentalis* (white cedar)

- **Possible side effects:**
  - Avoid with epilepsy or brain metastases.
  - Avoid in acute and chronic airway obstruction (stimulates smooth muscle).

- **Possible interactions:**
  - Unknown.
9) *Urtica dioica* radix (nettle root)

- Antiprostatic (antihyperprostatic).
- Alterative.

- Active constituents: Lignans, coumarins, lectins (UDA), polysaccharides and sterol glycosides.
General Herbal Support

9) *Urtica dioica* radix (nettle root)

- Widely used to treat BPH due to antiprostatic action and used by a lot of herbalists to aid treatment of PC.

- Lignans in *Urtica* known to reduce binding of 5α-DHT to SHBG, thereby reducing serum androgen levels.

- Weak inhibitor of 5α-reductase.

- Also inhibits aromatase and Na⁺/K⁺ ATPase in prostatic tissue.
9) *Urtica dioica* radix (nettle root)


- Mostly based on traditional use.
General Herbal Support

9) *Urtica dioica* radix (nettle root)

- **Possible side effects:**

  - None known.

- **Possible interactions:**

  - None known.
General Herbal Support

10) *Viola odorata* (sweet violet)

- Stimulating expectorant.
- Anti-inflammatory
- Antineoplastic.

- Active constituents: Saponins, flavonoids, violarutin.
General Herbal Support

10) *Viola odorata* (sweet violet)


- Most evidence is based on traditional use for treating breast, throat, colon and lung cancer, and ability to inhibit metastases (unreferenced sources).
General Herbal Support

10) *Viola odorata* (sweet violet)

- **Possible side effects:**
  - None known.

- **Possible interactions:**
  - None known.
Natural Approaches: specific herbal medicine support for prostate cancer
Specific Herbal Support

1) **Support during conventional cancer treatments**

- Very complex due to range of different treatments available.
- Rapidly changing treatments.
- New contraindications/interactions.
- Different advice from hospitals/oncologist/pharmacists.
- Compliance during treatment.
Specific Herbal Support

1) **Support during conventional cancer treatments**

- Diet and lifestyle as before is absolutely essential.

- Prostate cancer linked to 5 main dietary and lifestyle factors:
  - 1) diet high in animal fats.
  - 2) diet high in red meat.
  - 3) Being overweight (BMI > 26).
  - 4) Little aerobic exercise.
  - 5) High alcohol consumption.

- All of these increase levels of ILF-1 (similar activation by these factors in breast cancer).
Specific Herbal Support

1) **Support during conventional cancer treatments**

- Additional helpful dietary modifications include pomegranate and pumpkin seeds:
Specific Herbal Support

1) Support during conventional cancer treatments

Pomegranate (*Punica granatum*)

- Recent studies show has strong antioxidant and anti-inflammatory effect, and antiproliferative and pro-apoptotic activity against prostate cancer (Malik et al. *Proc Natl Acad Sci U S A.* 2005; 102(41):14813-8).


- Activity believed to be due to flavonoid ellagic acid.
Specific Herbal Support

1) Support during conventional cancer treatments

Pumpkin seeds (*Cucurbita pepo*)

- Seeds and oil rich in anti-inflammatory fatty acids that have anti-inflammatory effect on prostate.
- Seeds also rich in phytoestrogenic sterols, that have antiprostate cancer activity.
- Seeds also rich in zinc, that can be helpful (zinc in moderation).
Specific Herbal Support

1) **Support during conventional cancer treatments**

- Different supplements discussed yesterday and today have a major place in support during treatment, though some more appropriate than others, some may be contraindicated during specific treatments (discussed later).
Specific Herbal Support

1a) Surgery

- Extensive surgery imposes huge demand on body for healing - repair/production of: blood vessels, connective tissue, muscle, immune cells, control of inflammation essential as bladder can become very irritated.

- Hyperbaric oxygen treatment can aid recovery.

- Anaesthetic puts large strain on liver.

- High quality nutrition is essential for rapid recovery from surgery.
Specific Herbal Support

1a) Surgery

- **Key Supplements**
  - Copper
  - Iron
  - Magnesium
  - Probiotics
  - Selenium
  - Vitamin B
  - Vitamin C
  - Vitamin D
  - Vitamin E (post surgery)
  - Zinc

- Vitamins/minerals best obtained from good quality multinutrient supplement.
Specific Herbal Support

1a) Surgery

- Additional supplements:
  - Boswellia for anti-inflammatory effect.
  - *Centella* for healing.
  - Modified citrus pectin (MCP)/cranberry/pomegranate to ↓ metastasis.
  - Milk thistle to prepare and support liver for anaesthetic and for detoxification after surgery.
  - Protein: whey/pea/tofu protein (immune stimulant).

- Supplements should be started month before surgery and stopped 3 days before surgery (unless otherwise stated).

- Restarted as soon as possible after surgery to maximise recovery.
Specific Herbal Support

1a) Surgery

- **Contraindicated supplements** (anticoagulants/effect on liver):
  - Bromelain: theoretical anticoagulant – stop 3 days before surgery.
  - Fish oil: theoretical anticoagulant – stop 7 days before surgery.
  - Garlic: anticoagulant – stop 7 days before surgery.
  - Ginger: anticoagulant – stop 3 days before surgery.
  - Korean ginseng: anticoagulant – stop 7 days before surgery.
  - Maidenhair tree: theoretical anticoagulant – stop 3 days before surgery.
  - Pomegranate: can affect absorption of drugs – stop 3 days before surgery.
  - St John’s wort: interfere with anaesthetic - stop 7 days before surgery.
  - Valerian: interfere with anaesthetic – stop 7 days before surgery.
  - Vitamin E: anticoagulant - stop 3 days before surgery.
Specific Herbal Support

1b) Radiotherapy

- Beam can “graze” and damage organs (colitis can be real problem).
- Long term increased risk of new cancer (lymphoma etc.)

Side effects include:
- Alopecia.
- Anaemia.
- Burning.
- Constipation.
- Diarrhoea
- Emesis.
- Fatigue – often very severe, lasts month after finished.
- Immune suppression.
- Nausea.
- Sterility.
Specific Herbal Support

1b) Radiotherapy

- **Dietary modifications:** as per general guidelines.

- **Additional lifestyle modifications**

- Rest well – plenty of naps. Stop work for duration if possible.

- Gentle exercise.

- Treat skin gently: no perfumes, soaps, shampoo near affected area. Wash skin with tepid water and baby soap.

- **Emollient cream (Calendula, Glycyrrhiza, Hypericum IO).**
Specific Herbal Support

1b) Radiotherapy

- **Key supplements**
  - β-carotene/vitamin A: reduce inflammation, increase cancer sensitivity. 100 mg β-carotene/10,000 IU vitamin A for duration.
  - Fish or flaxseed oil key to reduce inflammation in and around prostate and to enhance immune system for healing.
  - Maitake: increase immune function, better long term results.
Specific Herbal Support

1b) Radiotherapy

- **Key supplements**
  - Probiotics for bowel health & detoxification, ↓ inflammation.
  - Turmeric: protect healthy cells from side effects without reducing effectiveness.
  - Vitamin C: better responses, fewer side effects. 3000 mg max.
  - Vitamin E: enhance effect of radiotherapy and reduce cancer cell division during treatment. 400 IU daily maximum.
Specific Herbal Support

1b) Radiotherapy: Key herbs

- *Aloe vera*: juice for GIT
- *Astragalus*
- *Calendula*
- *Centella*
- *Echinacea*
- *Eleutherococcus*
- *Ginkgo biloba*
- *Glycyrrhiza glabra*
- *Hypericum perforatum* (IO) externally.
- *Matricaria*
- *Panax ginseng*
- *Rhodiola*
- *Silybum*
- *Withania*
- *Zingiber officinale*
Specific Herbal Support

1b) Radiotherapy

- Contraindicated supplements
  - Supplements mentioned above as being contraindicated in large amounts.
  - St John’s wort: theoretical systemic sensitiser - stop 7 days before treatment.
Specific Herbal Support

1c) Chemotherapy

- Attacks any cells that are actively dividing, therefore kills normal cells as well as diseased ones, again highly toxic.

- Side effects dependent on drug(s), dosage, timing, patient’s genetics, general health, co-morbidities and history of previous chemotherapy/radiotherapy etc.

- Move towards more targeted drugs with less severe side effects.
Specific Herbal Support

1c) Chemotherapy

- Side effects include:
  - Alopecia.
  - Anaemia.
  - Anorexia.
  - Bone marrow suppression.
  - Constipation.
  - Diarrhoea.
  - Emesis.
  - Fatigue.
  - Immune suppression.
  - Mouth ulcers.
  - Myalgia.
  - Nausea.
  - Peripheral neuropathy.
  - Sterility.
Specific Herbal Support

1c) Chemotherapy

Additional dietary and lifestyle modifications

- High protein smoothies (whey/pea/tofu protein) 1-2 daily (10-30 g) – prevent weight/muscle loss, soothing on gut (glutamine content) and increase immunity.

- Adequate hydration for detoxification: vegetable juices best – as snack between meals better.

- Small, frequent meals best (every couple of hours) rather than 3 large meals less frequently.
Specific Herbal Support

1c) Chemotherapy

Additional dietary and lifestyle modifications

- Extra spices and herbs in food – counter hypo- and dys-gueusia.
- Avoid very bitter and very sweet flavourings.
- Eat moist, soft foods: mucilage-rich, easy to swallow and digest (bananas, smoothies, sweet potatoes, potatoes, brown rice, apple sauce).
- Avoid hard, dry foods (toast, biscuits, crackers, cereals).
- Eat slowly and chew thoroughly – small bites only.
Specific Herbal Support

1c) Chemotherapy

Key supplements


- Bromelain: studies show aids chemotherapy.

- Coenzyme Q10: reduces tiredness and fatigue. Maximum dose of 30 mg per day. Higher doses contraindicated.
Specific Herbal Support

1c) Chemotherapy

Key supplements:

- *n*-3 fatty acids: essential for immune function and to prevent cachexia.

- Quercetin and turmeric both safe to use for prostate cancer chemotherapy.

- Vitamin D₃ (high dose) has been shown to improve effectiveness of Taxotere (docetaxel) chemotherapy for prostate cancer.
Specific Herbal Support

1c) Chemotherapy

Key supplements

- Maitake: increase immune function, better responses and long term results.
- Probiotics for bowel health and detoxification, reduce inflammation.
- Vitamin C: better responses, fewer side effects. 1000 mg, time release with bioflavonoids.
1c) **Chemotherapy**

- **Additional supplements**

- Glutamine for gut irritation (3-10 g per day).

- Multivitamin (not antioxidants as well).
Specific Herbal Support

1c) Chemotherapy

- **Additional supplements**
  - For mouth ulcers: liquorice or DGL tablets – chew/suck.
  - Peripheral neuropathy – $\alpha$-lipoic acid (150 mg tds), N-acetylcysteine (500 mg tds) or $B_{12}$ (1000 mcg sid).
Specific Herbal Support

1c) Chemotherapy

Key Herbs:

- Aloe vera juice
- Astragalus
- Centella
- Eleutherococcus
- Glycyrrhiza glabra
- Matricaria
- Panax ginseng
- Rhodiola
- Silybum
- Ulmus rubra
- Withania
- Zingiber
Specific Herbal Support

1c) Chemotherapy

- Contraindicated herbs and supplements
  - St John’s wort with any chemotherapy.
  - Grapefruit or pomegranate products with any chemotherapy.
  - Very high dose antioxidants.
Specific Herbal Support

1d) Hormone therapy

- Hormone agonists or antagonists.

- E.g. Gosarelin (Zoladex) and Prostap – GnRH antagonist, Casodex – androgen receptor antagonist and abiraterone – CYP17 inhibitor; all cause “andropausal” symptoms.
Specific Herbal Support

1d) Hormone therapy

<table>
<thead>
<tr>
<th>Hormonal agonist/antagonist drug</th>
<th>Side effects (selected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gosarelin/Prostap/Casodex/Abiraterone</td>
<td>Andropausal symptoms (flushes, night sweats), hypertension, arthralgia, peripheral oedema and weight gain, muscle wasting, loss of memory, impotence, testicular and penile atrophy, dyslipidaemia.</td>
</tr>
</tbody>
</table>
Specific Herbal Support

1d) **Hormone therapy**

- **Standard dietary and lifestyle advice** – exercise key.

- Address hot flushes, fluid retention, dyslipidaemia, hypertension, osteoporosis, low energy (vitamins C, D and E, coenzyme Q10, calcium, I-3-C, phytoestrogens(!), Actaea, Asparagus racemosus, Astragalus, Coleus forskohlii, Gymnema sylvestre, Glycyrrhiza, Salvia fruticosa, Zizyphus spinosa).
Specific Herbal Support

2) **Support after conventional cancer treatments or when no orthodox treatments undertaken**

- Dietary and lifestyle changes essential.
- Supportive supplements and herbs important.
- Work to ensure liver working efficiently for detoxification (*Arctium, Cynara, Rosmarinus* and *Schisandra*). *Silybum* as liver tonic if needed.
- Ensure bowel is working properly (for absorption) (*Calendula, Centella, Matricaria*).
Specific Herbal Support

2) **Support after conventional cancer treatments or when no orthodox treatments undertaken**

- Ensure gut flora optimal – prebiotics and probiotics to reduce enterohepatic recycling of toxins.

- Ensure lymphatic system working efficiently (*Echinacea*, *Calendula*, *Galium*, *Phytolacca*, *Trifolium*, *Viola*). Cold water spraying of pelvis.
Specific Herbal Support

2) Support after conventional cancer treatments or when no orthodox treatments undertaken

- Ensure immune system properly balanced (*Astragalus*, *Echinacea*, *Calendula*, *Phytolacca*, maitake, vitamin D$_3$).

- Work to reduce inflammation in patient’s body (ESR and CRP useful measures) – *Curcuma*, *Boswellia*, bromelain, fish oil, pumpkin seeds, pomegranate.
Specific Herbal Support

2) **Support after conventional cancer treatments or when no orthodox treatments undertaken**

- Anti-angiogenesis herbs useful: *Aesculus, Ginkgo, Ruscus, Scutellaria baicalensis, Zingiber*, white tea. I always check VEGF status – usually high in PC and can be good marker for treatment.

- Reduce metastatic spread with immunomodulators, maitake, *Galium, Thuja, Viola odorata*, MCP, cranberry extract, pomegranate, vitamin D₃.
2) **Support after conventional cancer treatments or when no orthodox treatments undertaken**

- Check testosterone, DHT and DHEA – Genova Diagnostics carry out a good test.

- Work to reduce imbalances if present.
Specific Herbal Support

2) **Support after conventional cancer treatments or when no orthodox treatments undertaken**

Key Herbs:

- *Actaea*
- *Astragalus*
- *Galium*
- *Eleutherococcus*
- *Glycyrrhiza glabra*
- *Panax*
- *Phytolacca*
- *Rehmannia*
- *Thuja*
- *Viola*
- *Withania*
- *Zingiber*
Case study 2
Case study

Case 2: prostate adenocarcinoma
26/01/09

**PC:** 45 y/o, raised PSA found incidentally while being evaluated for sub-fertility (12/08). Occ. nocturia.

**PMH:** Recurrent prostatitis: 06/06, 04/08 and 08/08. High stress. Occ psoriasis.

**FH:** cancers (melanoma (s), breast (s, gm), lung (f), skin (b), stomach (u, gf))

**Examination:** NAD

**ESR/CRP:** 25 mm/hr (1-15) and 15 mg/l (<5).

**VEGF:** high side of normal; 900 units/µl of plasma (100-1000).

**PSA:** 4.2 ng/ml (<2.5) on 01/09; previous (3.6 on 12/08).
Case 2: (cont)
26/01/09

**Gleason:** 3+3 (6): mildly aggressive.

**MRI:** slightly enlarged nodule on prostate, no extracapsular spread.

**Isotopic bone scan:** no metastasis to bones.

- Refused conventional treatment as wanted to preserve fertility, sexual function and continence.
Case studies

Case 2: (cont)
26/01/09

Supplements:
- Acidophilus (1 tab sid)
- Bromelain (500 mg tds ac)
- Fish oil (1000 mg tds)
- Lycopene (15 mg sid cc)
- Maitake (1000 mg tds ac)
- Multivitamin/mineral (1 tab sid cc)
- Quercetin (500 mg tds ac)
- Turmeric (500 mg tds ac)
- Vitamin D₃ (5000 IU sid cc)
Case studies

Case 2: (cont)
26/01/09

Dietary and lifestyle modifications:

- Cut out red meat, dairy, reduce saturated fats, refined carbohydrates, increase vegetable – alkalising diet. Increase flax seeds, pomegranate juice, white tea, pumpkin seeds, cabbage family.

- Increase exercise, reduce weight, work on stress.
## Case studies

### Case 2: (cont)

**Herbs:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Prescription</th>
<th>Vol/ml</th>
<th>Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/02/09</td>
<td>Prostate mix</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Actaea racemosa</em> Tr. 1:2 60%</td>
<td></td>
<td>20</td>
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<td><em>Astragalus membranaceus</em> Tr. 1:2 25%</td>
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<td>30</td>
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<td><em>Glycyrrhiza glabra</em> Tr.1:1 25%</td>
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<tr>
<td><em>Phytolacca americana</em> Tr. 1:5 45%</td>
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<td>5</td>
<td></td>
</tr>
<tr>
<td><em>Scutellaria baicalensis</em> Tr. 1:2 60%</td>
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<td><em>Silybum marianum</em> Tr. 1:1 70%</td>
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<td>140</td>
<td>4</td>
</tr>
</tbody>
</table>

Sig 10 ml bid cum aq gel ac
Case studies

Case 2: (cont)

- Next visit 06/03/09: ESR and CRP reduced.
- PSA level unchanged (but no increase).
- Kept treatment plan unchanged.
- Consultant happy to work with me to monitor patient on “watch and wait” protocol – would only push for treatment if PSA increased above 10.
Case studies

Case 2: (cont)

06/03/09

<table>
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<tr>
<td><em>Thuja occidentalis</em> Tr. 1:5 60%</td>
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</tr>
</tbody>
</table>

140  4

Sig 10 ml bid cum aq gel ac
Case studies

Case 2: (cont)

- Next visit 06/03/09: ESR and CRP further reduced.
- PSA level.
- Kept treatment plan as before.
## Case studies

**Case 2: (cont)**

**Herbs:**

<table>
<thead>
<tr>
<th>04/06/09</th>
<th>Rx: Prostate mix</th>
<th>Vol/ml</th>
<th>Weeks</th>
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</tbody>
</table>

Sig 10 ml bid cum aq gel ac
Case 2: (cont)

- 04/06/09: ESR and CRP normal, PSA 2.1 ng/ml.

- Same herbs and supplements continued.
Case studies

Case 2: (cont)

Herbs:

07/09/11

<table>
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<tr>
<td>Sig 7.5 ml bid cum aq gel ac</td>
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</tr>
</tbody>
</table>
Case studies

Case 2: (cont)

- 07/09/1: ESR and CRP normal, PSA 1.4.
- Same herbs and supplements continued.
### Case studies

**Case 2: (cont)**

**Herbs:**

<table>
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<th>Rx 1: Prostate mix</th>
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Sig 7.5 ml bid cum aq gel ac
A Natural Approach to Prostate Cancer Care

Dr Christopher Etheridge
PhD, MRSC, MCPP, CChem, DoIC, ARCS, BSc (Hons) Phyto, BSc (Hons) Chem