

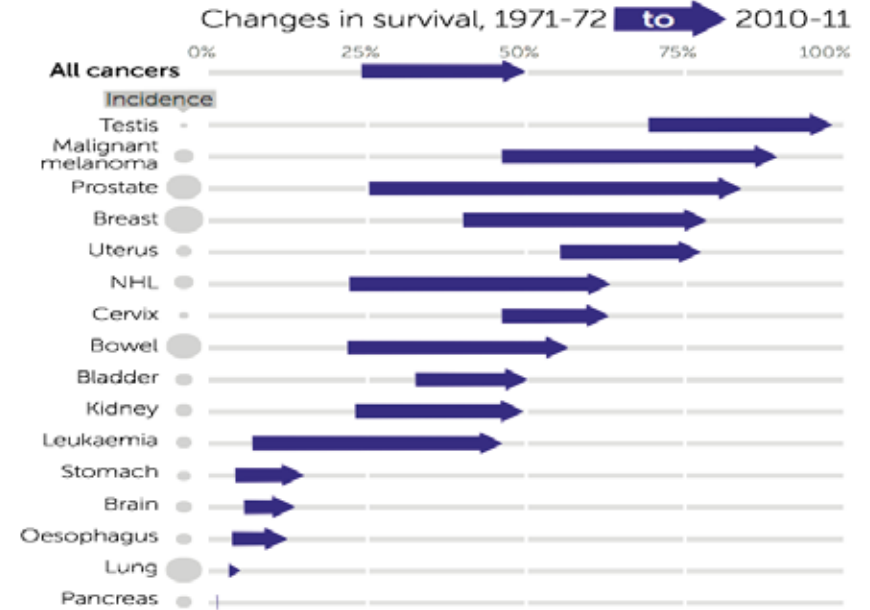
# Lifestyle after Prostate Cancer

## The facts



### Professor Robert Thomas

Bedford and Addenbrooke's Cambridge University Hospitals  
Biological & Exercise Science  
Coventry University





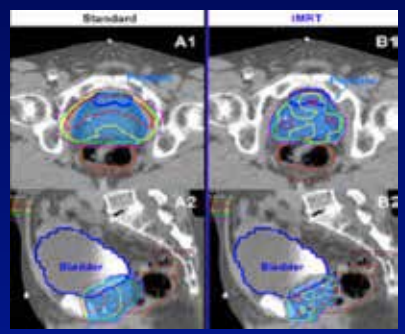
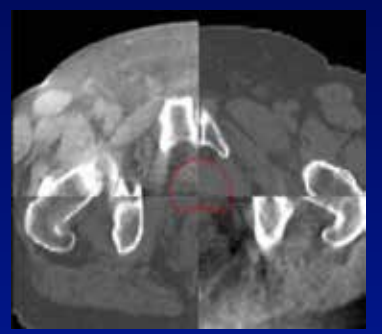

### Survivorship Facts and Figures 2012




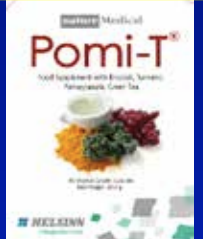
	Now	2022
UK	2.5 million	3 million
USA	12 million	18 million

**Men:** Prostate 43%, colorectal cancer 9% melanoma 7%.

**Women:** Breast 41%, uterine 8%, colorectal 8%

**>65 yrs:** Quarter of the population cancer survivors

## Common issues among living with and beyond cancer

- Fatigue and tiredness
  - Mood, anxiety
  - Depression
  - Brain power & intellect
  - Poor appetite
  - Altered bowels
  - Blood clots
  - Quality of life
  - Hot flushes
  - Bone density
- Poor sleep pattern
  - Secondary cancers
  - Proctitis
  - Incontinence
  - Metabolic syndrome
  - Weight gain
  - Erectile dysfunction
  - Financial issues
  - Marital strain
  - Social isolation



[www.ncsi.org.uk](http://www.ncsi.org.uk)

LIVING WITH AND BEYOND CANCER: TAKING ACTION TO IMPROVE OUTCOMES



Address holistic needs of the patients and family at every stage in their journey

- Addressing any physical or practical concerns
- Signposting to local or national support groups
- Signpost wellbeing clinics, education events,
- Support self management courses.
- Referral to Allied Healthcare support
- Advice related to lifestyle i.e. Stop smoking
- Info or referral to a physical activity programme
- Info or referral for advice on diet and nutrition
- Referral for counseling or psychological support
- Support related to work and financial concerns
- Support for spiritual needs
- **More research needed**

[www.ncsi.org.uk](http://www.ncsi.org.uk)

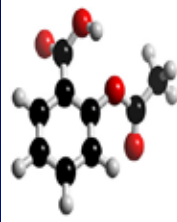
## Our research portfolio



# Exercise – fights cancer

## 180 biochemical changes:

- Lower IGF-1 and higher IGFBP-3 levels
- Serum from exercisers encourage P53 activity
- VIP
- Irisin
- Prostaglandins
- Prostaglandin and COX-2 inhibition
- Reduce weight – and help hormonal mileau
- Increases the bowel transit time
- Reduce cholesterol and lipids



## The National Cancer Institute

- Systemic review
- 45 observational studies:

2-3 hours of moderate PA a week is linked to a >30% reduction in relapse

Ballard-Barbash et al Nat Can Inst 2012

No study has reported higher PA with worse outcomes



## Supervised Exercise and ADT for Ca Prostate

121 men with CaP starting ADT  
Resistance and aerobic exercise programme

Significant improvement in:

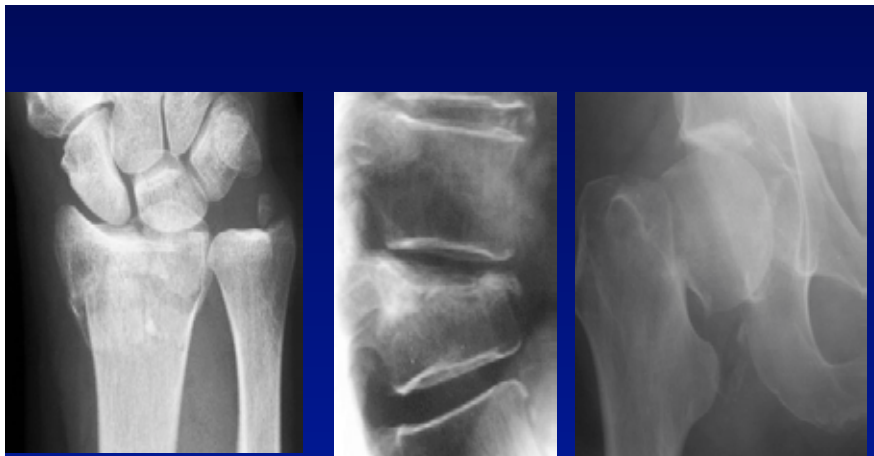
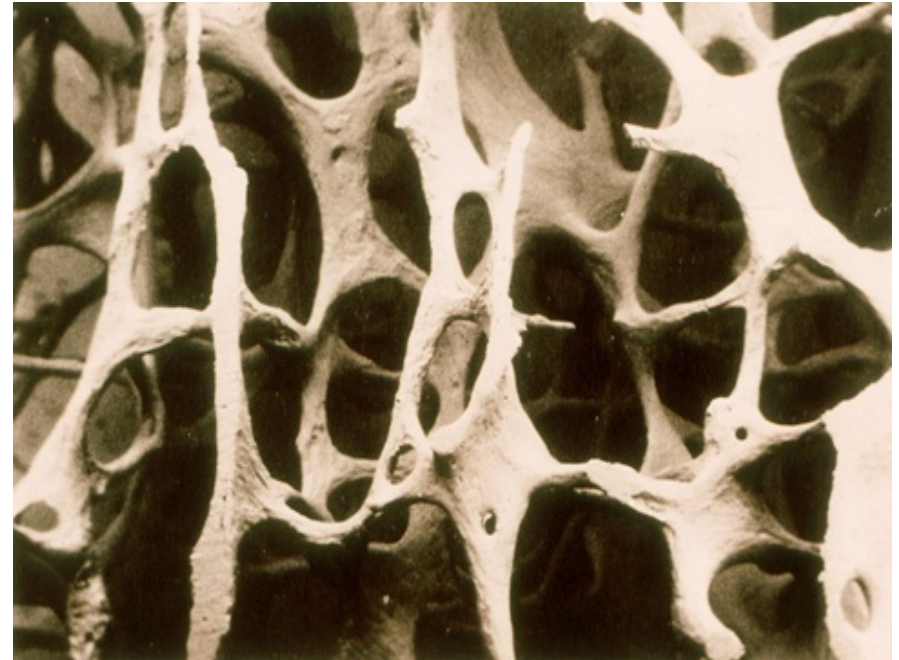
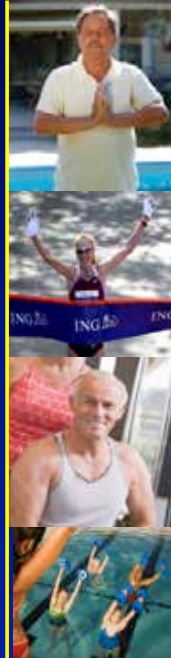
- Hot flushes
- Muscle strength
- BMI
- Abdominal fat, triglycerides, blood sugar (Metabolic syndrome)

Segal et al JCO, Vol 27, No 3, 2009: pp. 344-351



## Why supervised programmes

- Social interaction
- Improves safety
- Motivation to turn up and do more
- Dietary advice
- Excess or wrong type of exercise



Reduced bone health leads to osteopenia, osteoporosis then fractures, loss of height, pain and deformity



BMJ

1. Calcium intake and bone mineral density: systematic review and meta-analysis:

- 59 RCT
- No clinical benefit from calcium and vit D supplements

Vicky Tai BMJ 2015;351:h4183

2. Effect of calcium supplements on risk of myocardial infarction and cardiovascular events: meta-analysis

- 15 RCT 8151 participants
- Increase cardiovascular risk

Bollard et al BMJ 2010;341:c3691

# Exercise for bone health

RCT of 223 women breast cancer taking risedronate, calcium & vit D:

- Usual care v 30mins 4-7 times/wk aerobic
- BMD baseline and 6 months
- If adherence >50% in exercise programme – 20% (Significantly) different BMD

Waltman et al. (2009)



# Other lifestyle guidelines

Bone health is improved by:

- High calcium and vitamin D diets
  - Oily fish Green leafy veg, grains, nuts, yeast, sun dried mushrooms
- Green tea and other polyphenol rich foods
- Protein mainly from pulses/soya not meat
- Be physical activity
- Stop Smoking
- Avoid excessive alcohol intake
- Excessive caffeine intake (>4 cups/day)
- Ideal weight >18.5kg/m<sup>2</sup>

Brown et al., 2003, Twiss et al., 2001, Mackay & Joy 2005, Saad F, et al. J Clin Oncol 2008;26:5465-76; Tanna N. Nurs Times 2009;105:28)



## Arthralgia incidence

55% of breast cancer\*

40% prostate cancer survivors\*

- Osteoarthritis
- Chemotherapy (Taxotere)
- Tamoxifen
- Aromatase inhibitors
- Herceptin and other biologicals

\* Younger age



## RCT of an exercise intervention for aromatase inhibitor induced arthralgia (HOPE study)

121 women with breast cancer taking an AI

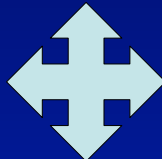
12 weeks exercise intervention programme:

- Reduced arthralgia
- Improve QoL
- Dose-response relationship

Irwin et al JCO 2015,(33),10.



## Barrier to exercise is arthralgia



Yang NCRI 2015

Arthritis Research UK

A report by Arthritis Research UK  
Complementary and alternative medicines

Complementary and alternative medicines for the treatment of rheumatoid arthritis, osteoarthritis and fibromyalgia.

## Glucosamine Chondroitin

**Glucosamine** - amino sugar made from shellfish or prepared:

- 7 of 13 RCT reported glucosamine better than placebo.
- Two Meta-analysis - Doubtful benefit

- **Chondroitin** - A complex sugar produced from cartilage
- 22 RCT – Some minimal benefit over placebo
- Two meta-analysis- Doubtful significance

Wandel et al meta-analysis. BMJ 2010; 341.

Towheed et al *Cochrane Database Sys Rev* 2005; 18(2):CD002946

Reichenbach et al *Anns of Int Med* 2007; 146(8):580

## Fish Oils

- Rheumatoid arthritis 17 RCT - some benefit plus reduced non-steroidal intake
- Osteoarthritis numerous RCT – most negative inconclusive benefits

[Cleland 2006, Fortin 1995]

## Polyphenols Rich foods

1. Anti-inflammatory properties, which reduce the discomfort and stiffness  
[Mitchel PG]
2. Anti-oxidant properties, which protect the joint from oxidative damage  
[Giovannucci et al., 2006, Stivala 2000].
3. Anti-apoptotic effects on chondrocytes reducing cartilage degeneration  
[Shen].
4. Modulation metalloproteinases – remodels cartilage in arthritic joints.  
[Dahlberg, Brinckerhoff].



## Arthralgia?

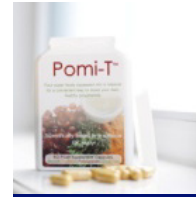


*“ I have noticed is a great improvement in an arthritic knee condition such that I will avoid a total knee replacement for the foreseeable future, along with this tendons have lengthened enabling better knee flexion. I can touch my toes easily for the first time in years”*



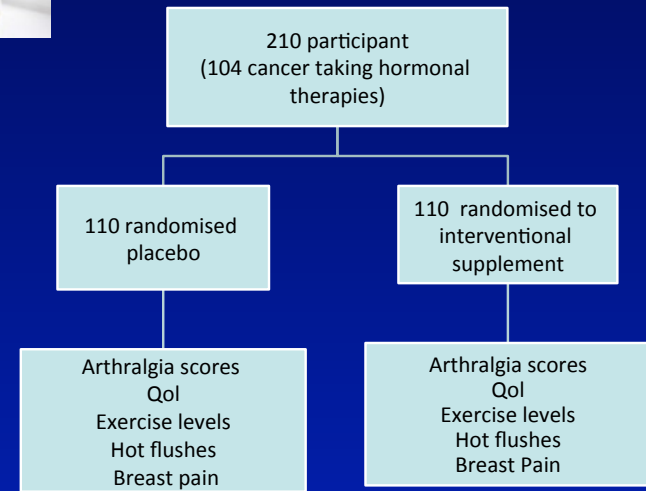
18,000 miles in 200 days

*“ Half way across USA I ran into problems with a left knee pain - a week after taking pomi-t, I was able to continue”*



## A double blind RCT of a phytochemical rich food for arthralgia post cancer hormonal treatments

(EudraCT 2015-002018-66)



## Frank Ellis Medal RCR



## Prostate cancer guidelines 2014

# NHS

**National Institute for  
Health and Clinical Excellence**



# More information



1. Talk at the NCR conference:-  
 "Exercise the panacea"



2. International evidence review:-  
 "Physical active and cancer – Thomas et al 2014 BJMP"

[cancernet.co.uk/exercise.htm](http://cancernet.co.uk/exercise.htm)



@cancernetuk



Monthly lifestyle news updates



Book via [cancernet.co.uk](http://cancernet.co.uk)

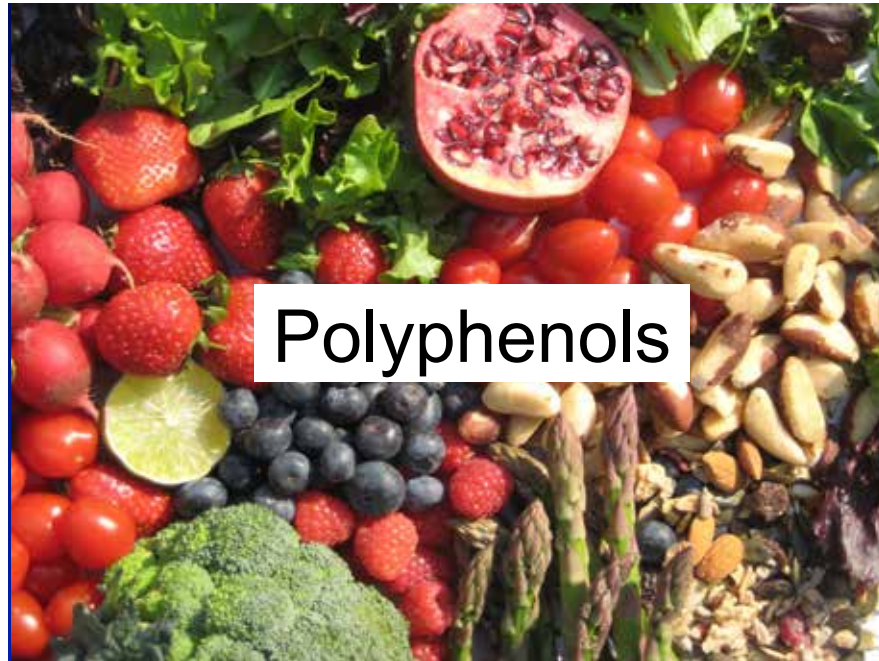
# Carcinogen avoidance



# Common ingested carcinogens

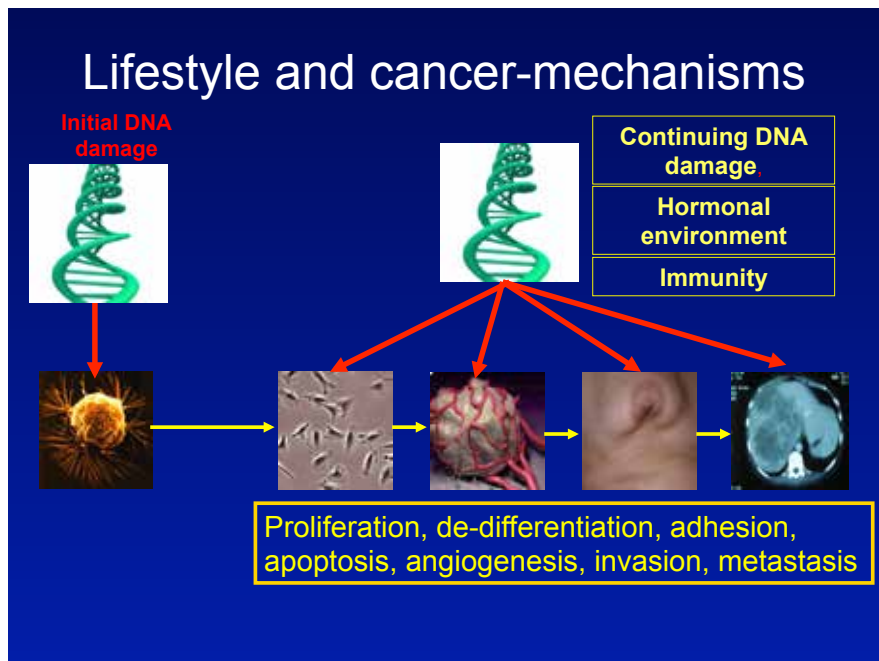
- Acrylamides - high temperature cooking
- Polycyclic or aromatic hydrocarbons - smoked, burnt, food
- N-nitroso compounds – processed and red bloody meats
- Allylaldehyde, butyric acid and nitrosamines - heated fats
- Hydrogen cyanide, and arsenic - smoke
- Benzene, formaldehyde, ammonia, acetone – smoke
- Processed sugar
- Excess Alcohol

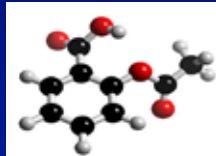




## Anti-cancer properties of polyphenols

- Antioxidant activity**
  - Herbs and spices with high Oxygen Radical Absorbance Capacity
  - Minerals for antioxidant enzymes; SOD, glutathione, catalase
- Phytoestrogenic activity**
  - Soy, flaxseed, lentils rich in isoflavones, weakly block 5 AR and ER
- Direct anti-cancer mechanism**
  - Proliferation, angiogenesis, adhesion, apoptosis and differentiation





## Mineral & Vitamin supplements



- **SU.VI.MAX**: RCT - Vit C, E&A, Se & Zn - reduction ca prostate [Herberg]
- **CARET**: Beta carotene & retinol - Lung ca worse [Omenn]
- **ATBC** : Alpha tocopherol & beta carotene - Lung ca worse [Heinonen]
- **HPF**: Men taking Zn 100mg/day - prostate ca worse [Leitzmann]
- **SELECT** : Vit E & selenium- prostate ca worse [Klein].
- **CV247**: RCT - no benefit of Cu, Mg Vit C over lifestyle on PSA [Thomas]
- **Post MI folate trial**: prostate ca worse [Ebbing, Figueiredo].
- **Australian skin trial**: U shape; high beta carotene & vit E worse [Heinen]
- **EPIC** : U shape; too low and high folate intake worse [Chuang].

## Whole food supplements



- VITAL cohort study: Lycopene, Saw Palmetto, Genistein – no effect - prostate cancer lower with grape seed extract [Brasky]
- RCT of saw palmetto: – No effect on BPH or cancer [Brent]
- Phase II: genistein no psa effect, increased IFGF [Spentzos]
- RCT (x2): lycopene – no effect on psa [Barber, Clark PE],
- Small RCT: Isoflavones & anti-oxidants - ns PSA effect [Shróder]

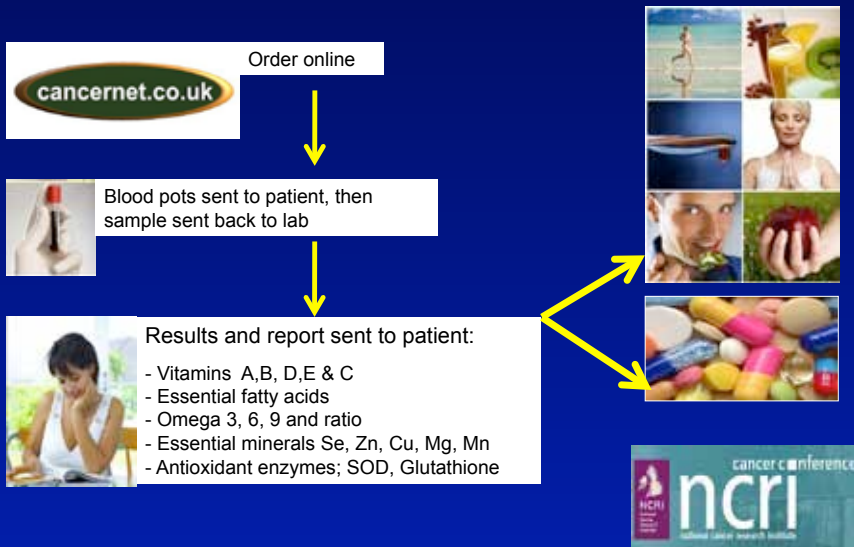
## What scientific advisory organisations say:



**National Cancer Institute California**  
**Memorial Sloane Kettering New York**

“Long term vitamin or mineral supplement are not recommended unless correcting a specific known deficiency”

# Cancer risk micro-nutritional profile



NHS

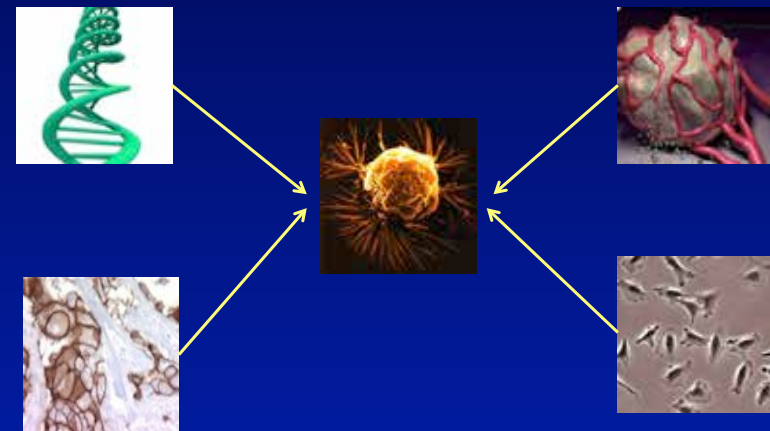


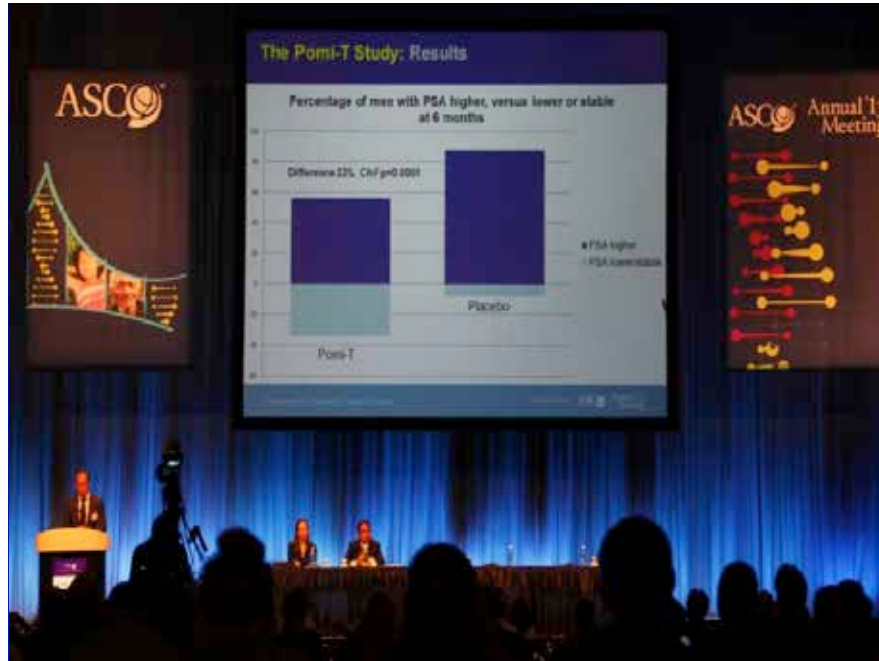
## Complementary therapy and lifestyle clinical trials committee



- Green Tea:** Epigallocatechin gallate (EGCG). Cancer cell lines; blocked ornithine decarboxylase - promotes proliferation, apoptosis, de-differentiate, angiogenesis. Phase 2 study reduced PSA. [McLarty, Porrini, Liao]
- Curcumin:** Yellow pigment in turmeric. Cancer cell lines; effect growth, invasion, migration, apoptotic, TK activation of the EGFR. Cox-I anti-inflammation. Breast cancer stem cells; blocked maturity. [Kakarlia, Somasundaram, Handler, Shah, Zhang, Dorai]
- Pomegranate:** Ellagic acid. Cell lines; effects proliferation, apoptosis, adhesion. 3 phase II studies reduced PSA<sub>t</sub> & markers of oxidative stress [Retitig, Lansky, Malik, Khan, Barber, Rocha, Wang, Pantuck, Carducci, Paller]
- Broccoli:** Iothiocyanate (sulforaphane). Cancer cell lines effects growth and apoptosis. In humans, down regulated cancer promoting genes and up regulated cancer suppressor genes [Gasper, Joseph, Heinen]

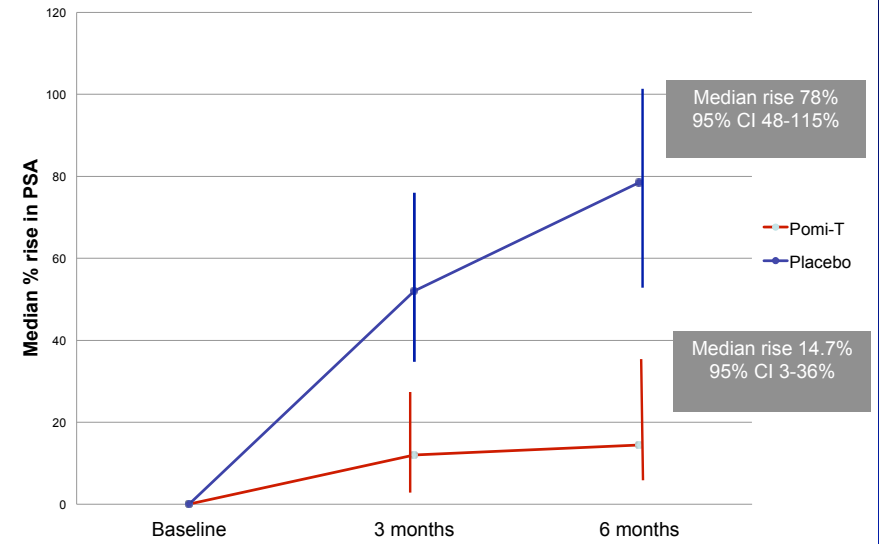
## Potential synergistic actions





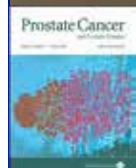
### Median percentage rise in PSA between the two randomised groups

Difference 63.8% ANCOVA p=0.0008



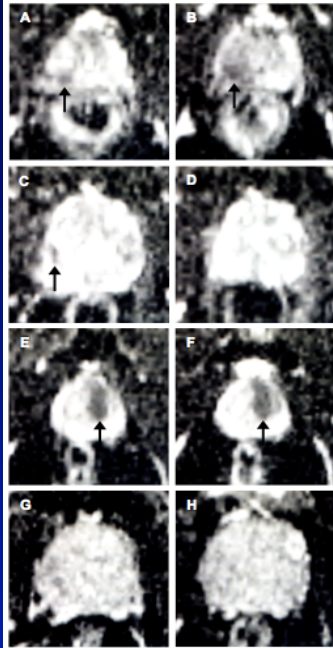
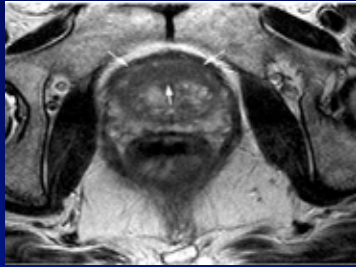
What's next?

[www.pomi-t.com](http://www.pomi-t.com)



Thomas et al The Pomi-T study Prostate cancer and Prostate diseases 2014 doi:10.1038/pcan.2014.6



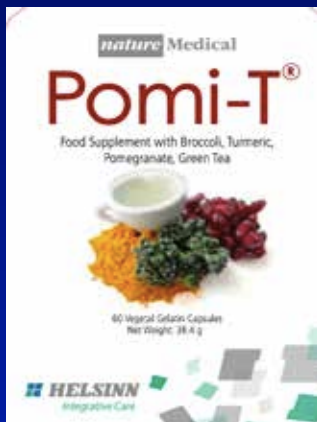


## PROVENT study

- Early prostate cancer
- Institute of Preventative Medicine
- Jack Cuzik
- Vitamin D, Pomi-T, aspirin, placebo



## Other trials



## Case 3

- 69 year man metastatic prostate ca
- No symptoms
- No change in medical intervention
- PSA 48 – 0.2 g/dl
- Broccoli & Pomi-T



2008



2009



2015



## Hot flushes?

*"I thought I would give Pomi-T a go, to help get rid of free radicals. After taking it for a short while I noticed that I no longer had ANY hot flushes. I hadn't taken any other prescribed medication for this. The only change I had made was taking Pomi-T. I was amazed and thought I would stop them and see what happened. Within a day or two the flushes came back, oh boy! I started the it immediately and within two days they had completely stopped again. I have taken them now for six months and have not had a single flush - this truly has transformed my life".*

## Case 1

- 59 yrs woman
- Colon cancer resected 2008
- Relapse liver and lung 2010 - unresectable
- 12 exercise referral - joined a gym (x3 /week)
- Stopped all sugar and processed meat
- Reduced carcinogen, increased polyphenols
- Took Pomi-T

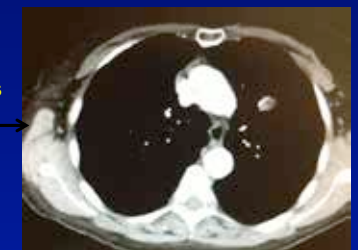


## Outcome

- No symptoms
- No medical intervention
- Remains on follow up
- No chemotherapy

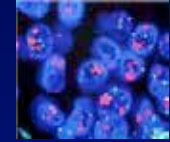


25 months





## Case 2



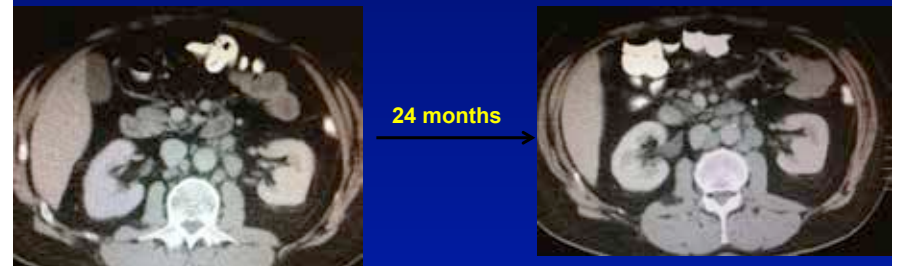
- 60 yrs man colon cancer resected 2008
- Adjuvant chemotherapy
- Relapse February
- Abdominal nodes
- No symptoms
- Two CT scans 3 months apart progression
- Rising CEA

## Lifestyle intervention

- Joined a gym (x3 /week) + walks daily
- Stopped all sugar and processed meat
- Reduced carcinogen exposure
- Increased polyphenols intake
- Took Pomi-T
- Online nutritional testing – marked vitamin D and omega 3 deficiency – holiday in the canaries took Vitamin D & krill oil

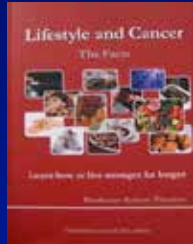
## Outcome

- CEA reduced (1123 – 670)
- CT abdominal nodes smaller at 4 months
- Feels wonderful





# More information



Monthly lifestyle news updates

## Pomi-T.com



cancernet@cancernetuk