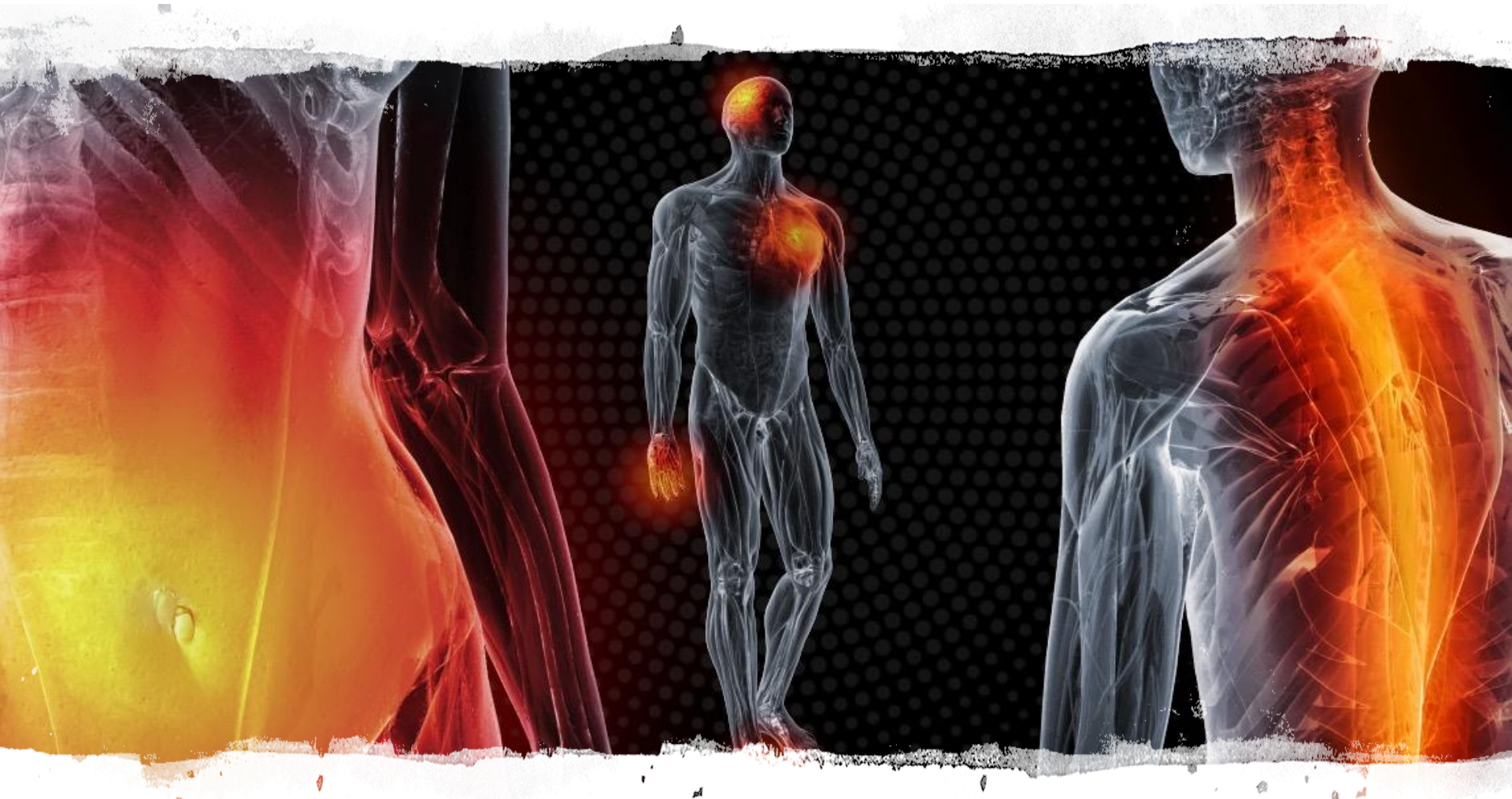


An anti-inflammatory diet & Prostate Cancer

Kim Wilcox, MSc ANutr
Nutrition Lead
Penny Brohn UK





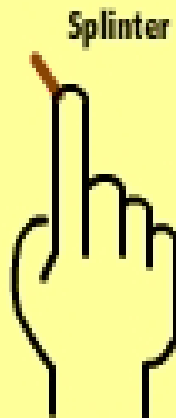
Inflammation ...
Warmth, redness, swelling, pain

Inflammation

Inflammation is an immune response designed to remove damaged tissue and foreign substances.

There are two main types...

Acute



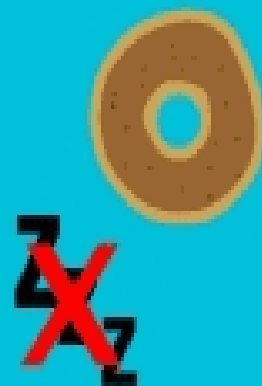
Acute inflammation is caused by injuries and infections like splinters, cuts, and sprains.

Response length: minutes-weeks



Chronic

Aggravation must be sustained to lead to chronic inflammation. Diet, autoimmune disorders, and general stress are common causes.



Response length: months-years

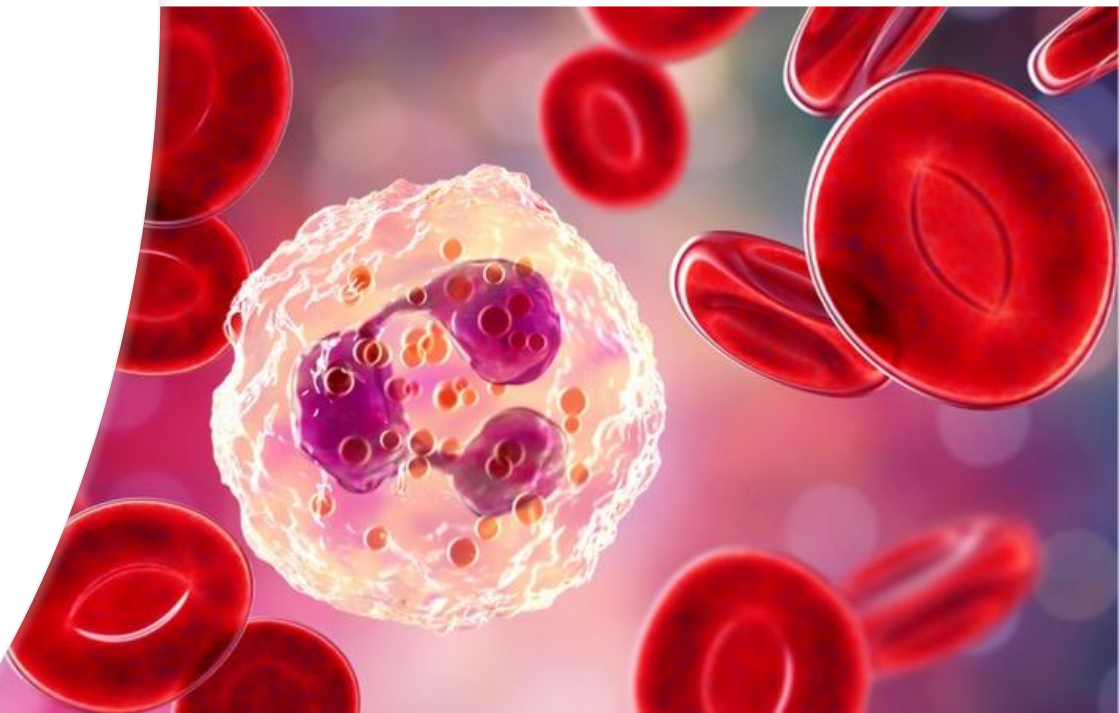
Common signs & symptoms

Acute:

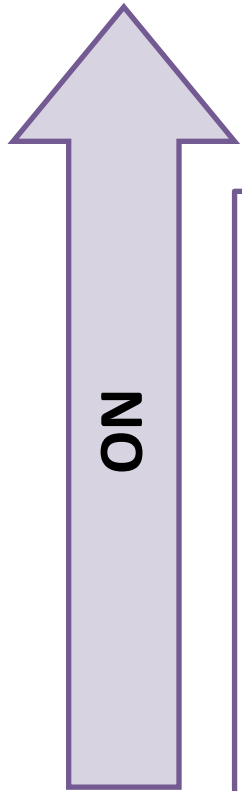
- Pain
- Redness
- Swelling
- Warmth

Chronic:

- Aches and pains
- Sores and rashes
- Low mood
- 'Brain fog'
- Fatigue

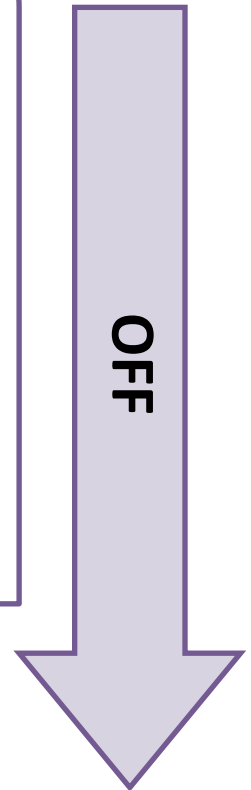


Turning Inflammation On & Off



Poor sleep
Caffeine, alcohol & drugs
Hormone imbalances
Chronic infections, diseases & injuries
High fat, sugar, salt diet
Low vitamins, minerals & fibre
Psychological stress
Low physical activity

Gut friendly foods – high fibre foods, probiotic foods
Omega 3 polyunsaturated fatty acids
Phytonutrients, vitamins and minerals
Vitamin D
Herbs & spices
Good sleep
Relaxation



Chronic inflammation in prostate cancer

‘If genetic damage is the match that lights the cancer fire, inflammation is the fuel that feeds the flames’.

*World Economic Forum
2019*

Chronic inflammation involves cytokines & oxidative stress, which can

- Damage healthy cells and their DNA
- Promote abnormal immune cell activity & weaken immune system
- Promote tumour growth – growth factors, cell proliferation, angiogenesis

Inflammation implicated in treatment side effects e.g. fatigue

Cancer can also cause inflammation via its damaging effect on cells

Two-way relationship between inflammation and:

- Blood sugar levels
- Microbiome
- Hormones

■

‘One of the most powerful tools to combat inflammation comes not from the pharmacy, but from the grocery store’

Harvard Medical School



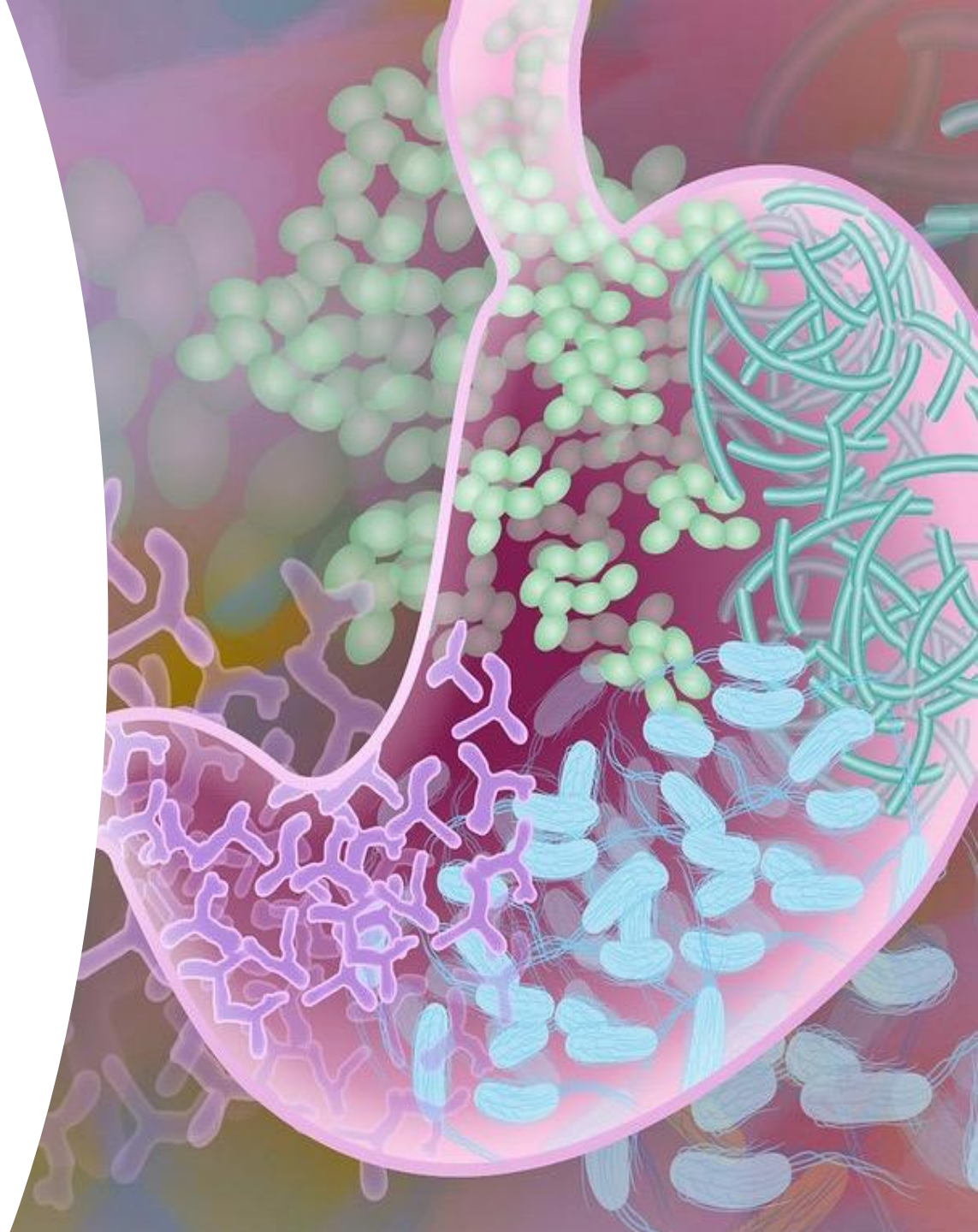
Strategy 1

Mind your microbiome

‘Healthy’ bacteria produce short chain fatty acids (e.g. butyrate) which have anti-inflammatory and immune supportive properties

People who regularly eat **30+ different** types of plant foods per week have a more diverse microbiome than those eating less than 10

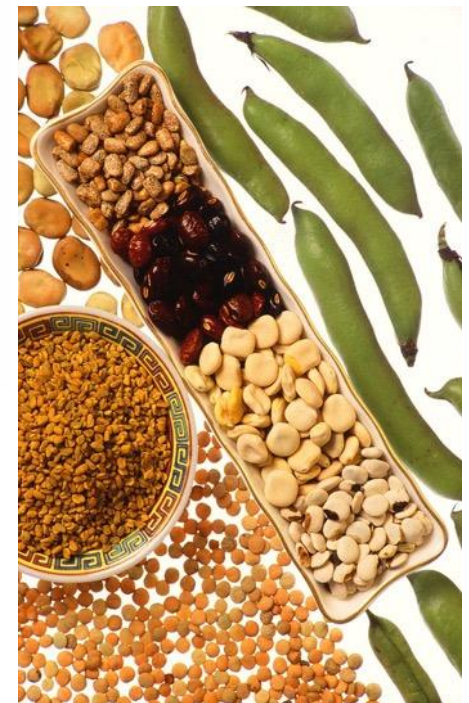
Prof Tim Spector, American Gut Project



Eating to support your microbiome ...

Think ...

FIBRE
COLOUR (rainbow)
DIVERSITY



Strategy 2 ...



Polyunsaturated fatty acid balance

....

Studies consistently show that **Omega-3** fatty acids can **reduce** inflammation

ALA



Salmon, mackerel, sardines, anchovies, herring



Grass fed dairy and meat



Flax, chia



Fish or algae supplements

Excess **omega-6** fatty acids, relative to omega-3, may **promote** inflammation



Corn
Sunflower
Soyabean
'vegetable'

Strategy 3...

Increase intake of other foods rich in phytonutrients (e.g. polyphenols) that *may* have an anti-inflammatory properties



Strategy 4...

Limit intake of
foods that may
promote
inflammation



Strategy 5...

Be **D** aware



Studies suggest that Vitamin D influences the inflammatory processes involved in the progression of cancer

Genetic variations



Safe sun exposure (80% body's requirements)



Strategic vitamin D3 supplement use in winter / Spring and/or if levels are low

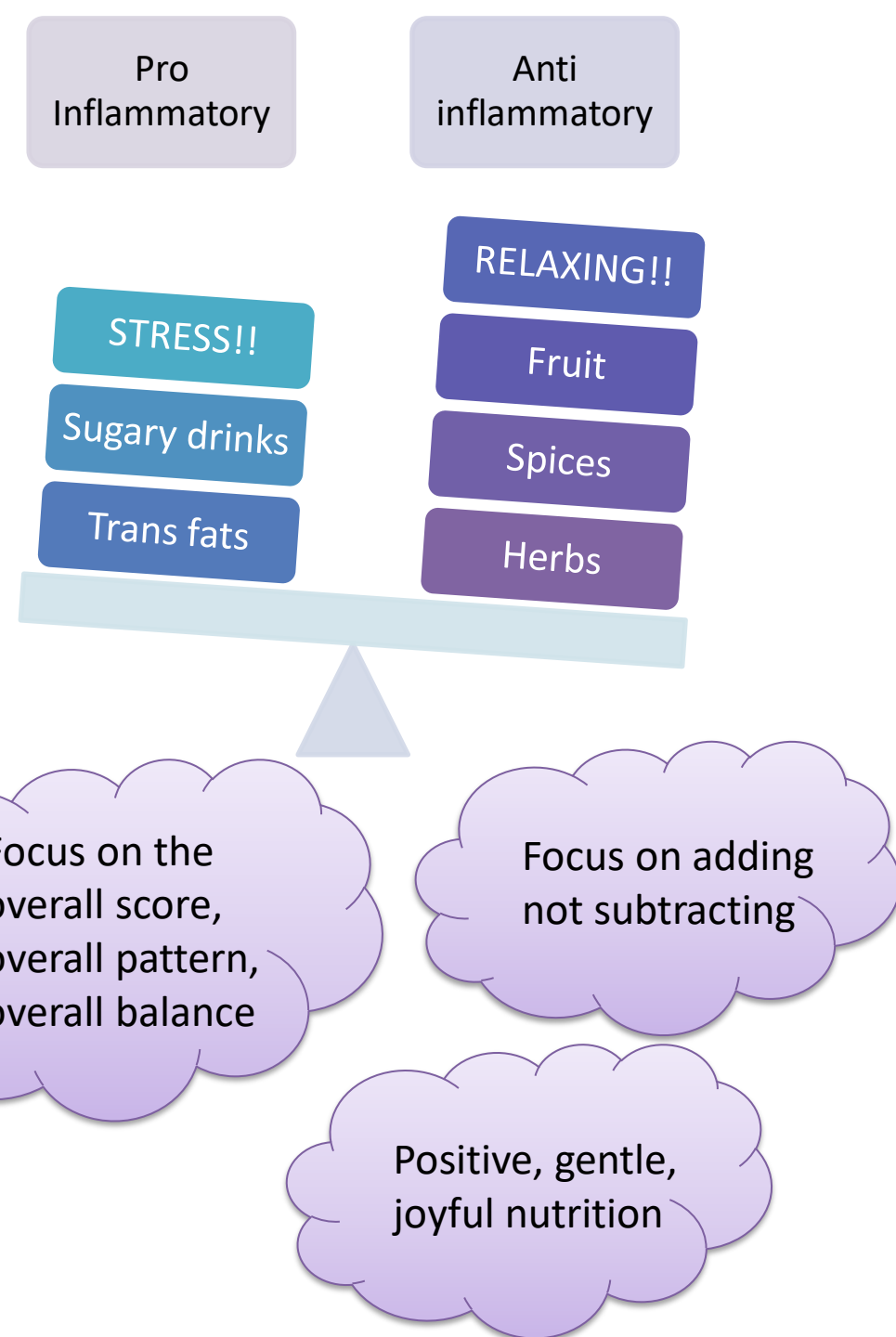


Aim for 100-150 nmols (blood level, unless otherwise directed).
Avoid excess supplement intake unless needed, high blood levels can be toxic

Strategy 6...

Try to relax!

Studies suggest it's the overall pattern of our diet that's important – so try not to be fearful about certain foods, focus on adding in the positives



Pro-inflammatory

High glycaemic diet, insulin resistance
Low fibre intake
Nutrient deficiency (esp. vitamin D,
omega 3)
Excess body fat (esp. around the middle)
Stress
Social isolation
Sleep loss
Inactivity
Overuse of antibiotics
Poor oral hygiene
Urban environments/oxidative stress

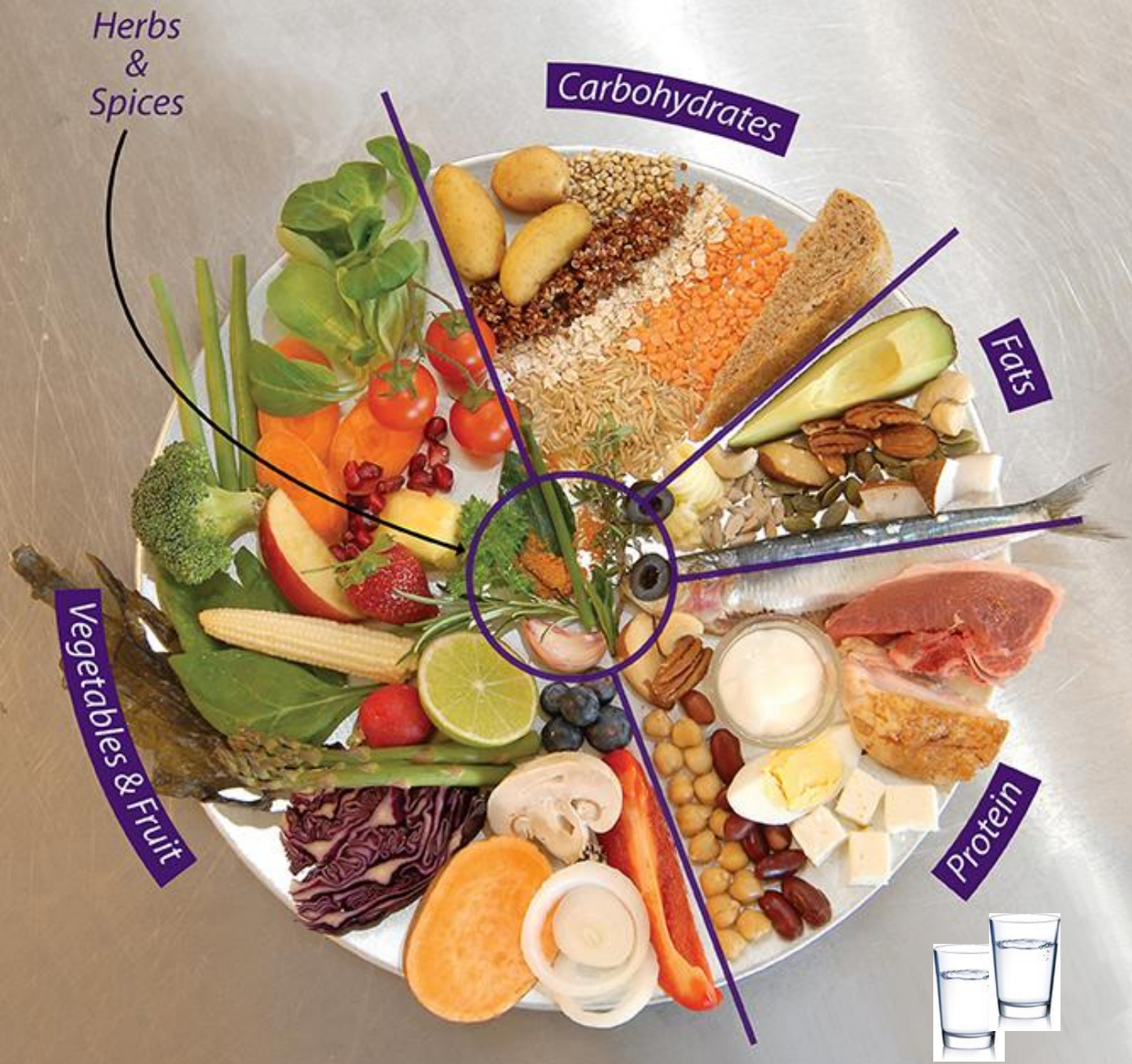
Anti-inflammatory

Colourful, antioxidant rich plant foods
Quality fats (esp. omega 3) and fat balance
Fibre rich diet
Good gut health / diverse microbiota
Fasting
Mindfulness/rest and relaxation
Sense of purpose
Community / social connections
Quality sleep
Regular movement
Being in a natural environment

COLOUR

VARIETY

MODERATION



‘Eat (real) food, not too much, mostly plants’

Diet, Nutrition & Prostate Cancer



*World Cancer Research
Fund, Third Expert Report,
2018*



Suggestive evidence for increased risk:

- Diets high in dairy
- Diets high in calcium
- Low plasma vitamin E
- Low plasma selenium
- Adult body fatness

Vitamin E: almonds, spinach, sweet potato, avocado, sunflower seeds, squash, olive oil.
Avoid supplements

Selenium: Brazil nuts (2pd), sunflower seeds, oatmeal, turkey, chicken breast. Supplements may not have same effect

Diet, Nutrition & Prostate Cancer

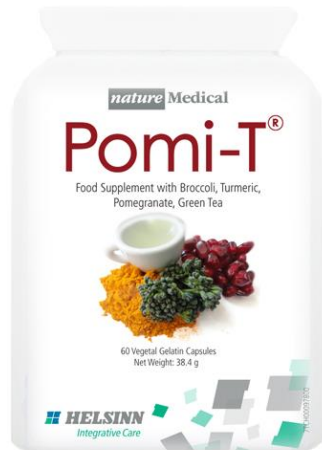


POLYPHENOLS & OTHER BIOACTIVE COMPOUNDS

Evidence for individual foods or nutrients is mixed, but some studies suggest that regular intake of the following may be beneficial (**caution with supplement forms with treatment*):

- Lycopene intake (**tomato puree**, tomatoes, guava, pink grapefruit) may reduce PSA. E.g 1 tbsp tomato puree
- Pomegranate
 - 250ml daily slowed PSA rate of increase (RCT)
- Broccoli and other cruciferous vegetables (5 pw)
- Turmeric in the diet or wholefood *supplement e.g. Pukka
- Green tea (2-4 cups day)
- Garlic and onions (allium family)
- Flaxseeds may reduce proliferation and PSA (1-2 tbsp daily)
- Soy foods (e.g. tofu, miso, soy milk)
- Regular, varied mushroom intake. *Reishi supplement
- Omega 3 intake may reduce risk of mortality
- Foods that support the gut microbiome
 - Fermented foods e.g. sauerkraut, kefir, yoghurt
 - Prebiotic rich foods/fibres
 - Polyphenols
- Good blood levels of vitamin D *may*:
 - Be linked with better outcomes
 - Reduce risk of aggressive progression
 - Reduce/slow increase of PSA in metastatic or locally advanced
 - Ideally test blood levels and aim for 100-125 nmol, avoid high levels (200+). Try <http://www.vitaminDtest.org.uk> or Better You <https://betteryoudotcom/collections/test-kits>,

Diet, Nutrition & Prostate Cancer



Polyphenol rich food supplement

- Broccoli
 - Turmeric
 - Pomegranate
 - Green Tea
-
- Developed by Professor Rob Thomas, Consultant Oncologist
-
- Studies have shown clinically meaningful favourable effects on PSA levels in men with prostate cancer

<http://www.cancernet.co.uk/pomi-t.htm>

<https://www.pomi-t.com/>



Rainbow challenge ...

RAINBOW CHART FOR YOU TO COMPLETE

ARTICHOKE
ASPARAGUS
AVOCADO
BAMBOO SHOOTS
GREEN PEPPERS
BOK CHOY
BROCCOLI
BRUSSELS SPROUTS
CABBAGE
CELERY

CUCUMBER
EDAMAME BEANS
GREEN BEANS
GARDEN PEAS
ROCKET
SPINACH
LETTUCE
SWISS CHARD
KALE
OKRA

RED PEPPERS
BEETROOT
RED ONIONS
RED CABBAGE
RADISH
RHUBARB
TOMATO
RADICCHIO

CARROTS
ORANGE PEPPERS
PUMPKIN
BUTTERNUT
SQUASH
SWEET POTATO
TURMERIC ROOT

SWEETCORN
YELLOW PEPPERS
GINGER ROOT
SUMMER SQUASH
LEMONS

OLIVES
PURPLE CARROTS
PURPLE SWEET
POTATOES
KALE
PURPLE POTATOES
BLUEBERRIES
RED CABBAGE
BLACK RICE
AUBERGINE

CHICKPEAS
CAULIFLOWER
MUSHROOMS
SHALLOTS
SEEDS
ONIONS
GARLIC
TURNIPS
FENNEL
NUTS
LENTILS
PARSNIPS

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

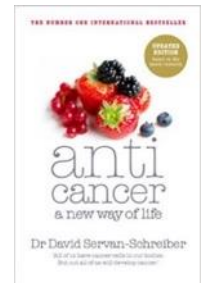
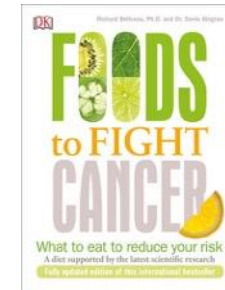
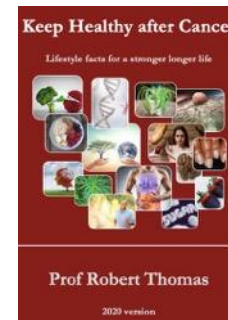
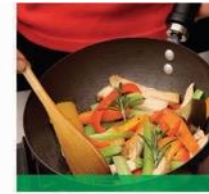
SUNDAY

<https://www.pennybrohn.org.uk/wp-content/uploads/2019/12/30-eat-the-rainbow-plant-foods-Challenge.pdf>

Useful resources ...

Penny Brohn (and NHS/Macmillan collaborations):

- Healthy Eating Guidelines <https://www.pennybrohn.org.uk/wp-content/uploads/2018/08/Healthy-Eating-Guidelines-July-2018-Final.pdf>
- Eating Well During Cancer Treatment https://www.pennybrohn.org.uk/wp-content/uploads/2019/05/Macmillan_PBUK_Eating-Well_A5_booklet_Online.pdf
- Eating Well When Eating Becomes Difficult: https://www.pennybrohn.org.uk/wp-content/uploads/2019/05/Macmillan_PBUK_When-eating-becomes-difficult_A5_booklet_Online.pdf
- Whole Life Approach 7 day Recipe Plan/online recipes
- **Zoom groups and personal nutrition consultations**
 - [Sign up for our newsletter](#) here



Other useful resources:

- Anti-Cancer Way of Life, Dr David Servan-Schreiber
- Anti-Cancer Living, Lorenzo Cohen & Alison Jeffries
- Keep Healthy after Cancer, Prof Rob Thomas, <http://www.cancernet.co.uk>
- Eat to Beat Illness, Dr Rupy Aujla
- Foods to Fight Cancer, Prof Richard Beliveau & Denis Gingras
- <https://www.vitamin-d-test.org.uk> £29 or Better You <https://betteryou.com/vitamin-d-test-kit> £32.95 with free supplement

