

Cancer Council Update 2011

research



prevention



support



Complementary medicine –helps or hinders ?

Public lecture

Cancer Council WA Perth 2011

Lesley Braun PhD

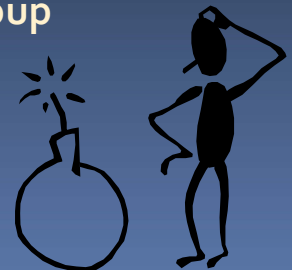
Snr Research Fellow, Dept Surgery, Monash University

Research pharmacist, Pharmacy Dept, Alfred Hospital, Melbourne

Vice President National Herbalists Association of Australia

Integrative Medicine Education and Research Group

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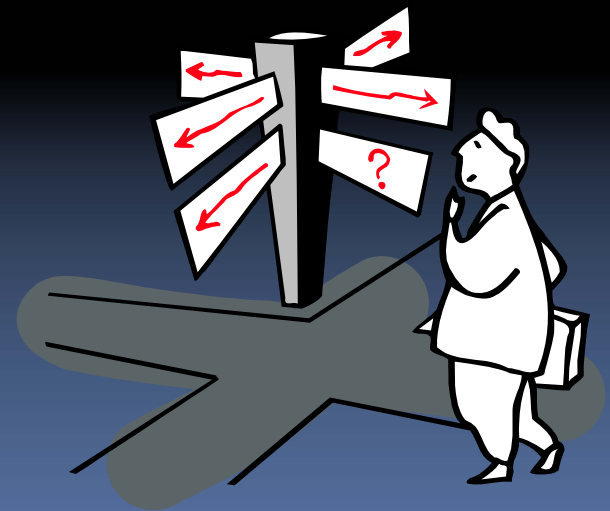


Alfred Hospital
Melbourne Australia



Where to today?

- Defining complementary and integrative medicine
- General usage and popularity amongst people with cancer
- Potential benefits
- Potential risks
- Practical considerations



Herbs & Natural Supplements

An evidence-based guide 3RD EDITION



Lesley Braun
Marc Cohen

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- 130 systematic reviews
- Comprehensive drug interaction tables
- E Book download onto desktop
- Twice short listed for 'best scholarly reference text' by the Australian Publishing Association (2006 and 2008)
- Only stand alone book to be in the international best evidence based CM resources according to the 2009 NPS report

Complementary medicines

- Nutritional supplements
 - Restoring RDI
 - Using higher doses as therapeutic agents
- Herbal medicines
 - Western herbal medicine
 - Chinese herbal medicine
- Bush flower remedies
- Homeopathic remedies



Complementary therapies

- Yoga
- Tai chi
- Meditation
- Massage
- Chiropractic
- Osteopathy
- Acupuncture
- Nutritional counselling



Who ?
Is using what?



In 2010...

A national survey of pharmacy customers which found that

71% of people
39% saw a CM

Who is taking a vitamin
supplements? Herbal
medicine? Other CM?

RESEARCH ARTICLE

Alternative Medicine

Open Access

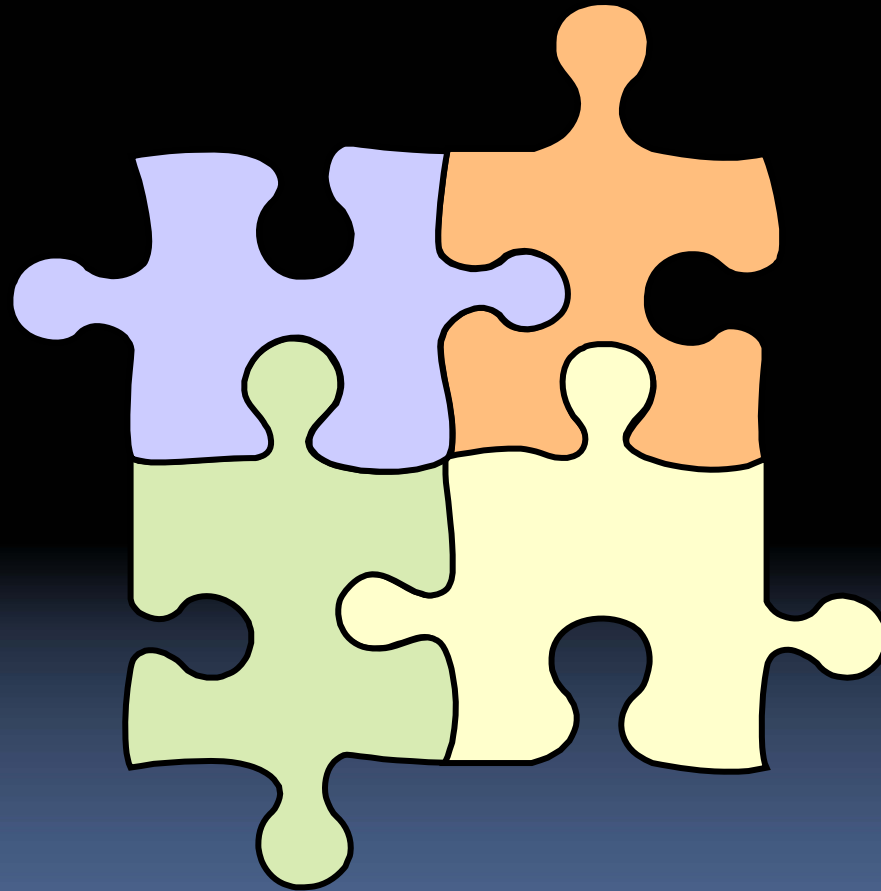
Perceptions, use and attitudes of pharmacy customers on complementary medicines and pharmacy practice

Lesley A Braun^{1,2*}, Evelin Tiralongo³, Jenny M Wilkinson⁴, Ondine Spitzer², Michael Bailey⁶, Susan Poole⁵, Michael Dooley⁵

Breast cancer and CM use (Aust)

- Of 367 patients , currently 80.1% were currently using complementary therapies
- CM use DEC with increasing age and level of education
- CM use not related to income, type of breast cancer, or other treatments.
- The most common reasons for use :
 - 86% to improve physical wellbeing
 - 83% to improve emotional wellbeing
 - 69% to boost the immune system
 - 49% reduce drug side effects
 - 39% assist treating the cancer
 - 36% reduce side effects of breast cancer

Integrative medicine



Integrative medicine

- NIH definition : “**integrative medicine** combines treatments from conventional medicine and complementary & alternative medicine for which there is some high-quality evidence of safety and effectiveness.”
- Many major cancer centers have IM units including :
 - Memorial Sloan Kettering Cancer Center, New York; M.D. Anderson Cancer Center, Houston, Tex; Johns Hopkins University, Baltimore, Md; Duke University, Durham, NC; and the Dana Farber Cancer Institute, Boston, Mass.

Herbs & Natural Supplements

An evidence-based guide 2ND EDITION



Calendula officinalis

LESLEY BRAUN
MARC COHEN

Herbs & Natural Supplements

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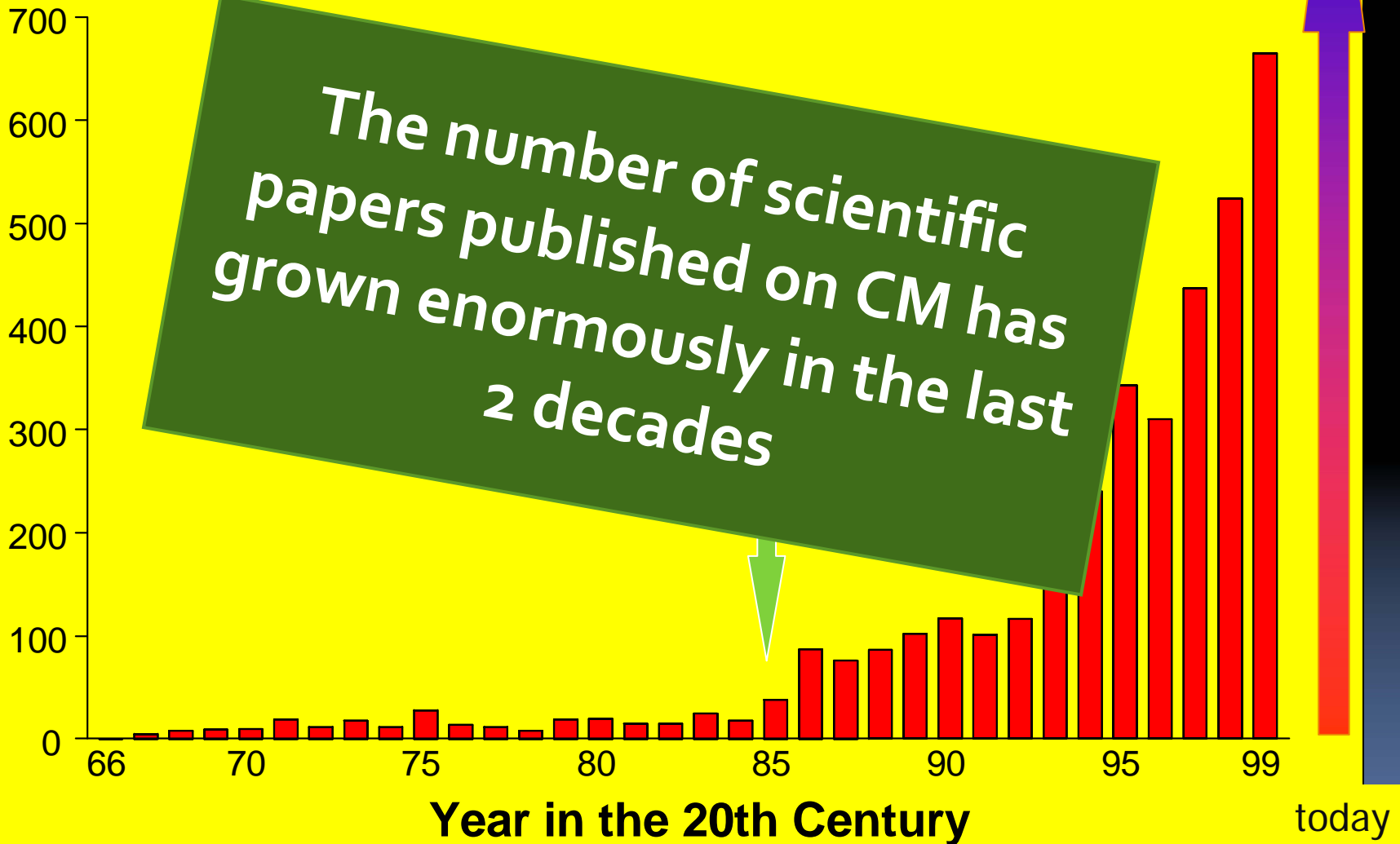


Lesley Braun
Marc Cohen

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SCIENTIFIC EVIDENCE AND CM

Complementary and Alternative Medicine Citations in Medline



Potential benefits of CM in oncology

- Symptom relief
 - E.g. Fatigue, pain, nausea, vomiting, insomnia, hot flushes
- Reducing treatment side effects
 - E.g. Cognitive decline, organ toxicity
- Enhancing quality of life
 - Physical – being able to get on with things each day
 - Psychological - anxiety, depression, 'control'
- Improving survival ?
- Addressing survivorship needs – **repair and rebuild**

Examples of complementary therapies with scientific support

- Meditation
- Yoga
- Qigong
- Acupuncture
- Massage therapy



Mindfulness-based stress reduction (MBSR)

- founded in 1979 by Dr Jon Kabat-Zinn, PhD,
- a clinical group intervention that is patient-centered, experiential, and educational
- Mindfulness meditation is **moment-to-moment awareness that is intentionally non-reactive and non-judgmental.**

Meditation

- 115 people with cancer, across different sites and stages
 - random allocation to meditation or wait-list group.
- Treatment : 8 weekly 2-hr sessions on MBSR
 - People meditated for up to 1 hr/d and attended full-day session during the course.
- Results: MBSR produced large & significant improvements in mindfulness, reduced depression, anxiety and distress
- Foley E et al. Mindfulness-based cognitive therapy for individuals whose lives have been affected by cancer: a randomized controlled trial. J Consult Clin Psychol 2010; 78(1):72-79

Mindfulness

- 16 volunteers with a history of cancer & 5 carers recruited from August 2008 to February 2009 through calls to the Cancer Council South Australia Helpline.

Treatment :

- 8-week mindfulness-based cognitive therapy program on individuals experiencing distress as a consequence of cancer.

Results:

- Treatment produced **significant reductions in depression and anxiety**, and these effects were sustained at the 3-month follow-up
- Sharplin GR et al. Mindfulness-based cognitive therapy: an efficacious community-based group intervention for depression and anxiety in a sample of cancer patients. *Med J Aust* 2010; 193(5 Suppl):S79-S82.

Meditation & breast cancer survivors

- 84 female BC survivors (Stages 0-III) within 18 months of treatment completion with surgery and adjuvant radiation and/or chemotherapy.
- 6-week MBSR program vs usual care
- Results : MBSR resulted in significantly lower levels of depression, anxiety, and fear of recurrence, along with higher energy, physical functioning compared to usual care
 - More compliance = greater physical benefits
- Lengacher CA et al. Randomized controlled trial of mindfulness-based stress reduction (MBSR) for survivors of breast cancer. *Psychooncology* 2009; 18(12):1261-1272.

That's a
strange place
for a
carrot

Yoga



Mill Ard

Yoga improving mental health

- Yoga is one of the most widely used complementary and alternative medicine therapies to manage illness
- A review of 10 randomised studies found:
 - The yoga groups compared to waitlist or supportive therapy groups showed significantly **greater improvements in psychological health: anxiety, depression, distress and stress.**

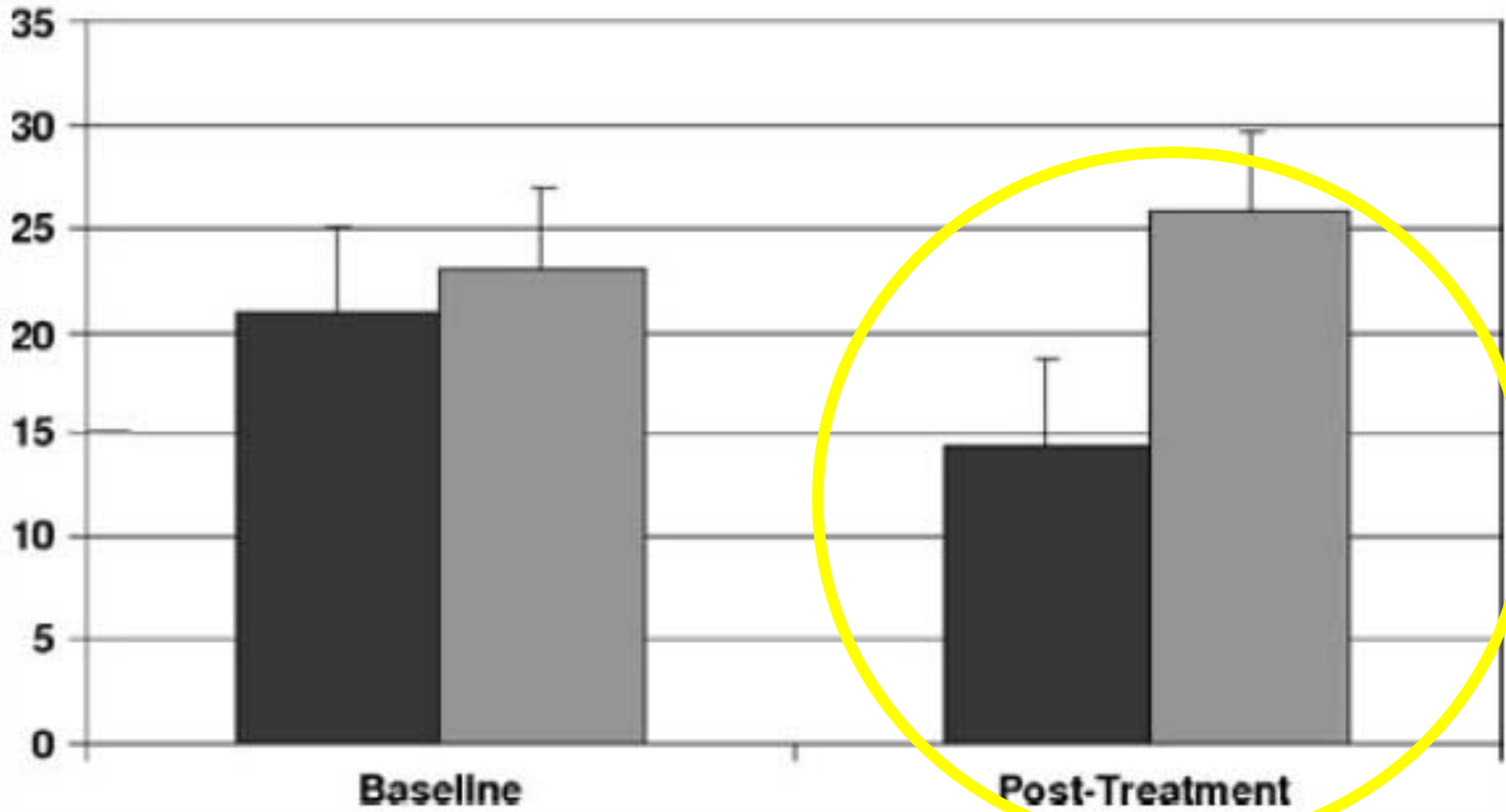
(Lin 2011)

Yoga for breast cancer survivors

- Randomised study of 37 early-stage breast cancer (stages IA–IIB) survivors
 - Not taking HRT or receiving chemotherapy but had hot flushes > 4/7 days
- Integrated program of gentle yoga + meditation + breathing exercises VS std care
 - 8 weekly sessions of 2 hrs
- The yoga program was associated with
 - significantly reduced frequency & severity of hot flushes
 - significantly reduced joint pain and fatigue
 - Higher levels of invigoration , acceptance and relaxation

Daily Hot Flash Total (Frequency*Severity)

■ Yoga ■ Wait List



Qigong – improving brain power


- 81 cancer patients recruited between October 2007 and May 2008
- Comparison: Usual care vs 10 weeks qigong program
- Results: People doing the qigong program had significantly **improved cognitive function, quality of life** and inflammatory marker (CRP)
- Oh B et al. Effect of medical Qigong on cognitive function, quality of life, and a biomarker of inflammation in cancer patients: a randomized controlled trial. Support Care Cancer 2011

Acupuncture





Acupuncture

- Recent advances in research suggest a possible role in symptom relief
 - Symptoms that seem to respond to acupuncture treatment include
 - pain, gastrointestinal side-effects, hot flushes, shortness of breath, fatigue, anxiety, depression and insomnia.
 - Few rigorous studies performed specifically for people with cancer
- 

Acupuncture for nausea and vomiting

- Several positive studies show potential benefits in reducing : post-operative nausea and vomiting and chemotherapy-induced emesis
- A review of acupuncture-point stimulation, including 11 RCTs, for chemotherapy-induced nausea or vomiting showed a benefit over drug therapy particularly for early nausea and vomiting
 - O'Regan and Filshie; Acupuncture and Cancer: [Autonomic Neuroscience](#); [Vol157, Iss1-2](#), 28 Oct 2010, Pgs 96-100

Acupuncture for hot flushes

- 2 RCTs found that acupuncture **reduced hot flushes by up to 60%** in women treated with Tamoxifen for breast cancer ([\[Deng et al., 2007\]](#) and [\[Hervik and Mjaland, 2009\]](#)).
- In a third study, acupuncture also found to :
 - improve libido, increase energy, improve clarity of thought and sense of well-being
 - O'Regan and Filshie; Acupuncture and Cancer: [Autonomic Neuroscience](#); [Vol157, Iss1-2](#), 28 Oct 2010, Pgs 96-10

Acupuncture – it's not all the same

- Techniques vary
 - E.g. Needle acupuncture, patient-administered acupuncture, electro-acupuncture, acupressure & auricular acupuncture
- Doses vary
 - Several times a day, daily, weekly
- Practitioner training varies
 - Medical doctors with short, targeted training
 - Chinese medicine practitioners with 5 years+ training

Massage therapy



Massage (Swedish & foot massage)

- Study of 3350 people receiving massage therapy at Memorial Sloan Kettering Cancer Centre
 - Pain and fatigue improved by 40%
 - Anxiety improved by 50%
 - Depression by 30%
 - Nausea by 20%
- People resenting with moderately severe symptoms had **even better responses**
 - Pain reduced by approx 48%
 - Fatigue reduced by approx 43%
 - Anxiety reduce by approx 60%
 - Depression reduced by approx 49%
 - Nausea reduced by 51%
- Cassileth and Vickers; J of Pain and Sympt Management; 28.3;2004

Potential harms & general safety



Potential harms of CM

- Safety issues
 - Side effects e.g. nausea
 - Adverse effects e.g. bleeding
 - Drug interactions e.g. Reducing treatment effects
- Costs
- Hope vs realistic expectation
- Avoiding use of effective conventional treatments

General safety issues - bleeding

- **Avoid Interference with blood clotting**
 - Cancer patients often have low platelets at various points throughout their treatment as a direct result of the cancer itself, or a temporary side effect from the chemo or radiotherapy.
 - CMs which significantly inhibit blood clotting will increase the risk of haemorrhage
 - Eg high dose garlic supplements, ginger extract, vitamin E capsules

General safety issues - infection

- **Avoid introducing infection**
 - Product quality is particularly important to assess in this population.
 - eg using contaminated products can have serious consequences when immuno-suppressed
 - **Use Australian made products**
 - **Make sure therapists have appropriate training**

General safety issues – interactions

- **Avoid Interactions** with conventional chemotherapy drugs or radiation therapy which could **reduce their therapeutic effect**
- Especially important in readily curable cancers
- Or chronic cancers that can be successfully managed for many years with medication eg CLL, myeloma

Some interaction examples



Green tea



- chemopreventive and chemotherapeutic effects of green tea reported in different malignancies
- Epigallocatechin-3-gallate (EGCG) selectively inhibits cell growth and induces apoptosis in cancer cells without adversely affecting normal cells
- **In 2006, EGCG demonstrated potent antimyeloma activity in experimental models**

Green tea deactivated treatment

- In 2009, EGCG was tested in test tube and animal models with the drug bortezomib (BZM) (used in multiple myeloma)
- Green tea extract **almost completely blocked** the effects of BZM in both tests
 - 1,2-benzene diol moiety contained in some green tea constituents (esp EGCG) formed stable covalent bonds w the boronic acid moiety of BZM.

(Liu and others 2008).

St Johns Wort

- St Johns wort is an effective treatment for mild, moderate and major depression according to over 30 randomised studies

However

- Human studies have identified it accelerates several important liver enzymes which metabolise many drugs
 - **CYP₃A₄** and **2C₁₉** induction effects for standard SJW extracts (e.g. LI 160), but no effects on CYP₁A₂, CYP₂C₉ or CYP₂D₆
 - It also accelerates a counter-transport protein (P-gp)

(Durr et al 2000, Jiang et al 2004, Wang et al 2001, 2004a; Gurley and others 2008a).

St Johns wort increases the breakdown of these chemotherapy drugs

- Teniposide, etoposide, epipodophyllotoxin, cyclophosphamide, ifosamide, vindesine, vinblastine, vincristine, paclitaxel, irinotecan, tamoxifen, imatinib

Chemotherapy and P-gp

Chemotherapy drugs utilising P-gp:

daunorubicin, docetaxel, doxorubicin, paclitaxel,
tamoxifen, taxol, tacrolimus, vinblastine,
vincristine

Egs of natural inducers: Hyperforin, Genistein

**Egs of natural inhibitors: Rosemary , curcumin,
piperine (black pepper)**

Positive outcomes of interactions

Can we avoid harm?
AND manipulate
interactions to
advantage?



Cisplatin interactions

- One of the most important drugs used for the treatment of a wide range of **solid tumours**
- But it induces numerous toxicities mainly caused by the formation of free radicals, leading to oxidative organ damage.
- Long-term side-effects of treatment include:
 - **nephrotoxicity, loss of high-tone hearing and peripheral neuropathy**

- As a strategy to reduce oxidative damage and drug-induced toxicities AOs (nutritional and herbal) investigated in animals and humans
- 2008 review of 4 clinical trials
 - combination of Vit E with Cisplatin was shown in **all trials** to reduce incidence of chemotherapy–induced peripheral neuropathy
 - 300-600mg/d
 - **No data included on long term survival**

(Wolf and others 2008)

Argyriou et al 2005

- RCT open label study
- N=31 people with cancer treated with six courses of cumulative cisplatin, paclitaxel
- Randomly assigned to receive nothing extra or vitamin E 600 mg/day during chemotherapy and 3 months after its cessation
- The incidence of neurotoxicity differed significantly
 - People taking vit E : 25%
 - Controls : 73%



ELSEVIER

Contents lists available at ScienceDirect

Progress in Lipid Research

journal homepage: www.elsevier.com/locate/plipres



Review

Fatty acids and breast cancer: Sensitization to treatments and prevention of metastatic re-growth

Philippe Bougnoux^{a,b,*}, Nawale Hajjaji^{a,b}, Karine Maheo^a, Charles Couet^{a,c}, Stephan Chevalier^a

^a Inserm U921 "Nutrition, Growth and Cancer", Université François Rabelais de Tours, Tours, France

^b Henry S. Kaplan Cancer Center, CHRU de Tours, Tours, France

^c Nutrition Department, CHU Bretonneau, Tours, France

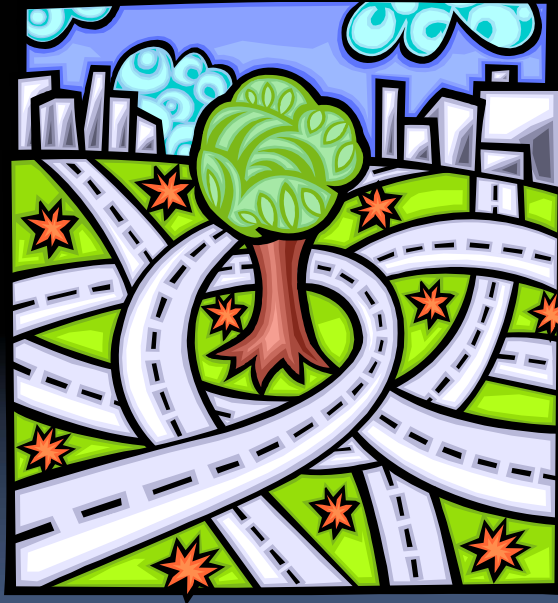
Fish oils, breast cancer & chemotherapy

- Late 90's : study showing women with **highest DHA in breast fat tissue** at diagnosis had greatest response to chemotherapy treatment
- 2010 : open study - metastatic breast cancer
 - People w highest incorporation of DHA into phospholipid membranes had greatest tumour response to chemotherapy and increased length of survival (Bougnoux et al 2010)

Some interactions we just don't know enough about ...

- Antioxidants and chemotherapy
 - Some studies show possible benefit
 - Increased tumour responses
 - Decreased organ toxicities
 - Some studies show no benefit
 - Theoretical concern with some chemo of reduced effectiveness
 - Depends on chemotherapy type, specific antioxidant, dose and when used (intra-cycle, inter-cycle)
 - **A lot more research required**

Practical considerations



General advice on how to minimise harm and maximise benefits

- Tell all your healthcare providers about what you are considering and why
 - Treatment can be modified?
 - Unmet needs?
 - Avoiding drug interactions & safety issues
- Gather information from credible sources
 - Efficacy, safety & risks – weigh them up
- Be critical when you evaluate the information
 - Or ask someone who knows how e.g. Your GP, pharmacist
- Only consider Australian made products
- Check the credentials of CM healthcare providers
- Have realistic expectations

Seek professional advice

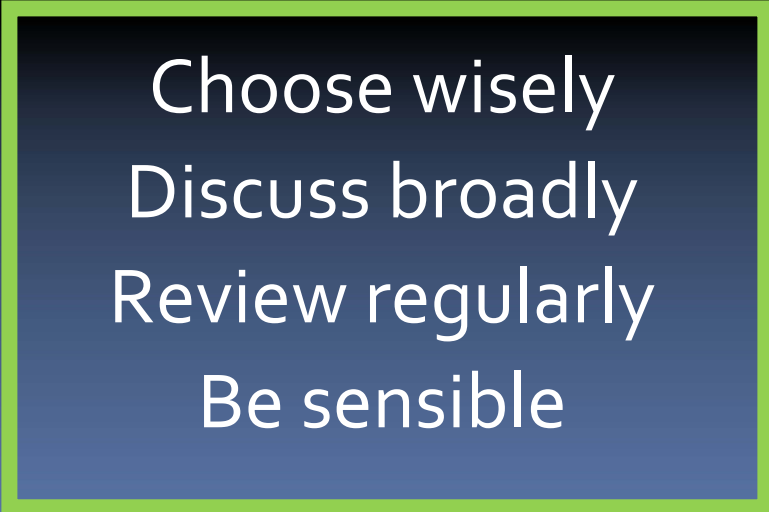

- Oncologist
- General practitioner
 - Integrative GP (AIMA)
- Pharmacist
- Psychologist
- Other practitioners : acupuncture, meditation, massage, naturopath
 - National Herbalists Association of Australia (NHAA)
 - Highest level accreditation for naturopaths and Western herbalists





In conclusion

Safe complementary therapies that are low risk can provide significant benefits to people with cancer, cancer survivors and carers




Choose wisely
Discuss broadly
Review regularly
Be sensible



Resources

- Websites :
 - Memorial Sloan Kettering Cancer Centre
 - Society for Integrative Oncology
 - Dr Andrew Weil's website
 - <http://www.drweil.com/>

 - Cancer Council Helpline
 - ask for a copy of the booklet
 - *Complementary and Alternative Cancer Therapies or visit www.cancervic.org.au/ treatments.*
- 

Questions?



**Audio of this lecture will be available
thanks to 720 ABC Perth at:**

www.cancerwa.asn.au/cancer-update

Next weeks' lecture

How you can spot cancer signs and symptoms

Sara Hiom, Cancer Research UK