

# *Medicines in Context*

Pharmac Seminar Series

Medicines in Healthcare

August 2015

# This session

- Medicines in context of healthcare in NZ
- Herbal medicines with “conventional” - safe integration
- Medicines in context of chronic conditions
- Cultural contexts – specific & woven throughout

# Medicines in Context

- NZ
  - majority publically funded
  - Approx. 2000 chemicals funded
  - PHARMAC manages selection & purchase
  - Yr-ended June 2014 key figures
    - **Approx \$800 million total combined spend on pharmaceuticals (includes vaccines and haemophilia treatments) (of approx \$14.9 billion total health expenditure or about 5.4%)**
    - **41.8 million funded prescription items filled (1.0% decrease)**
    - **3.4 million New Zealanders received funded medicines**
    - **26 new medicines funded**
  - DTCA



The PBS Safety Net reduces the cost of prescription medicines for individuals and families once the PBS Safety Net threshold has been reached.

### on this page

- ▶ [Safety Net thresholds](#)
- ▶ [Recording your PBS medicines](#)
- ▶ [PBS Safety Net family](#)
- ▶ [Non-PBS prescriptions](#)
- ▶ [PBS Safety Net 20 day rule](#)
- ▶ [Changing your PBS Safety Net registration and ordering a new PBS Safety Net card](#)

## Safety Net thresholds

The thresholds are updated each year on 1 January. The following rates are for 2015.

| Rates for 2015                                  | General patients | Concession card holders |
|---|------------------|-------------------------|
| <b>Patient contribution</b>                     | Up to \$37.70    | \$6.10                  |
| <b>PBS Safety Net threshold</b>                 | \$1,453.90       | \$366.00                |
| <b>When PBS Safety Net threshold is reached</b> | \$6.10           | Free                    |

When you are close to reaching the PBS Safety Net threshold, ask your pharmacist about a PBS Safety Net card. With this card your PBS medicine is less expensive, or free, for the rest of the calendar year.

If you choose a more expensive brand of medicine, you may need to pay more. The extra amount will not count towards your PBS Safety Net threshold. Talk to your pharmacist if you are unsure.

If you go over the threshold before you get your PBS Safety Net card, you may get a refund. If this happens, ask your pharmacist for an official PBS refund receipt, not just a regular docket.

To get a refund:

- download and complete a [PBS patient claim for refund form](#)
- submit your completed form at your nearest [Medicare Service Centre](#) or post it to the address on the form

the time they need them remains a major challenge.

In the 1999 survey, 183 of 193 countries responded to this question. **Table 7.1** shows the distribution of countries by WHO region according to reported levels of access to essential medicines.

**TABLE 7.1 Range of access to essential medicines by WHO region, 1999**

| WHO Region               | Percentage of population with regular access to essential medicines |                                      |                                       |                            |                    |
|--------------------------|---|--------------------------------------|---------------------------------------|----------------------------|--------------------|
|                          | Very low access<br>(< 50%)  | Low to medium<br>access<br>(50%-80%) | Medium to high<br>access<br>(81%-95%) | Very high access<br>(≥95%) |                    |
|                          | Number of<br>countries  | Number of countries                  | Number of countries                   | Number of<br>countries     | Total<br>Countries |
| Africa                   | 14  | 23                                   |                                       | 5                          | 45                 |
| Americas                 | 7   | 14                                   |                                       | 7                          | 35                 |
| Eastern<br>Mediterranean | 2   | 7                                    |                                       | 5                          | 22                 |
| European                 | 3   | 12                                   |                                       | 6                          | 46                 |
| South-East Asia          | 2   | 4                                    |                                       | 3                          | 9                  |
| Western Pacific          | 1   | 8                                    |                                       | 8                          | 26                 |
| Total countries*         | 29  | 68                                   |                                       | 34                         | 183                |

Even from these broad groupings the regional extremes are clear. In Europe, 25 of the 46 countries reporting were in the “very high” access group and only three countries were in the “very low” access group, whilst in the African region only 3 of the 45 countries were in the “very high” but 37 countries (over 80%) were in the “very low” and “low to medium” groups.

**Table 7.2** illustrates access in relation to population size.

**TABLE 7.2 Number of people without access to essential medicines, by WHO region, 1999**

| WHO Region | Number of<br>countries | Total population<br>(million) % of total | Estimated numbers, ranges and percentages of population without<br>regular access to essential medicines |
|------------|------------------------|--|--|
|------------|------------------------|--|--|



# Prevalence

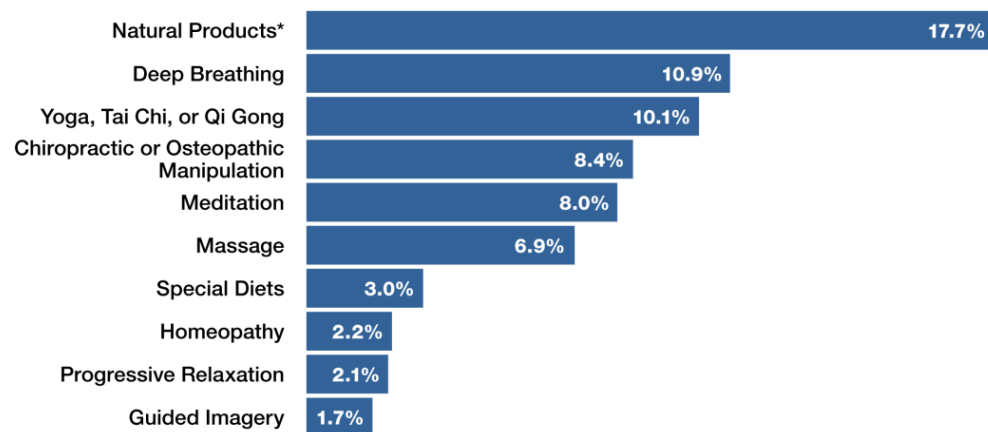
- 12-month prevalence of any **complementary & alternative medicine** use remarkably stable (2012 systematic review of CAM use surveys)
  - Australia - 49% (1993), 52% (2000), 52% (2004)
  - USA – 36% (2002), 38% (2007)
- 2012 US NHIS survey “use of **complementary health approach** in past 30 days” – 33.2%
- NZ data
  - 67% 2003 Whanganui GP survey (“ever used” CAM **therapies**)
  - 38% 2006 ED survey (“ever used” complementary & alternative **medicines**)
  - 53% 2015 6-month practice audit of cases (currently using complementary and alternative **medicines**)

# What?

## Use of Complementary Health Approaches in the U.S.

National Health Interview Survey (NHIS)

### 10 most common complementary health approaches among adults—2012



\*Dietary supplements other than vitamins and minerals.

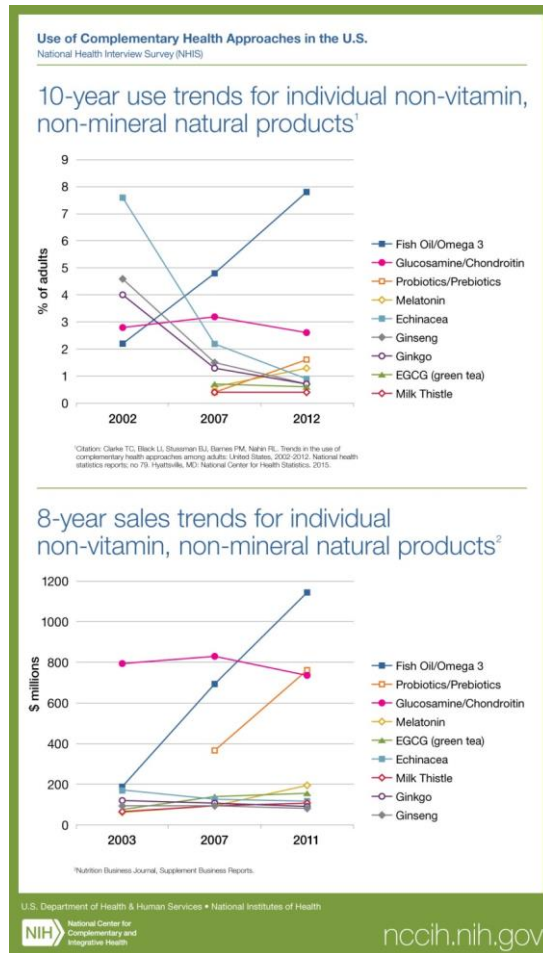
Source: Clarke TC, Black LI, Stussman BJ, Barnes PM, Nahin RL. Trends in the use of complementary health approaches among adults: United States, 2002-2012. National health statistics reports; no 79. Hyattsville, MD: National Center for Health Statistics. 2015.

U.S. Department of Health & Human Services • National Institutes of Health



[nccih.nih.gov](http://nccih.nih.gov)

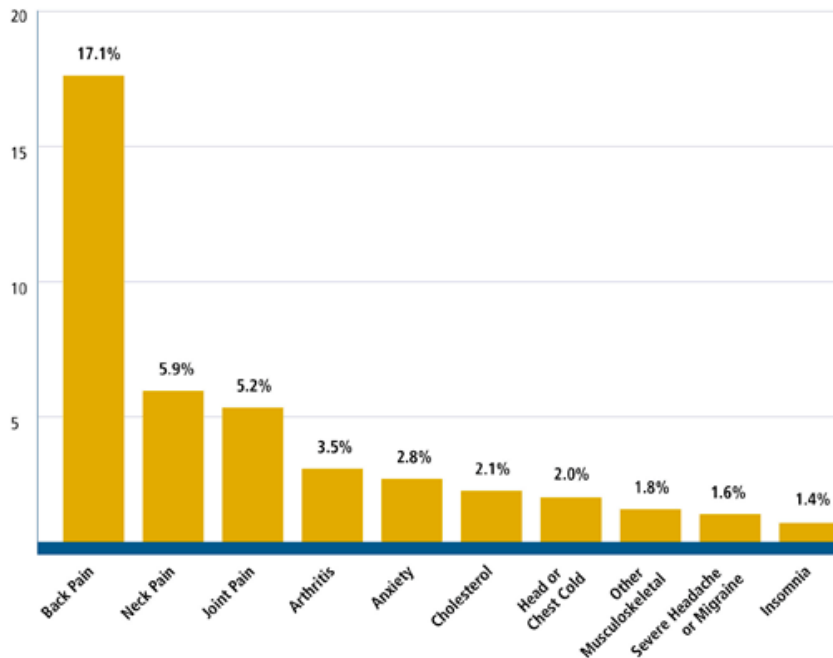
# What?



- NZ ED presenters Survey (2005) excludes Rongoa
  - Arnica (19.4%)
  - Rescue remedy (11.6%)
  - St Johns Wort (7%)
  - Aloe vera (3%)
- Cf. Whanganui GP survey (2003)
  - Chiropractic, acupuncture, aromatherapy and Rongoa Maori preferred

# Why?

Diseases/Conditions for Which CAM  
Is Most Frequently Used Among Adults - 2007



Source: Barnes PM, Bloom B, Nahin R. CDC National Health Statistics Report #12. Complementary and Alternative Medicine Use Among Adults and Children: United States, 2007. December 2008.

- Qualitative Research suggests:
  - Consumers seek more patient-centred, holistic care
  - Perceived reduced side effects – ‘natural’
  - ↑ accessible (NB internet)
  - Carefully marketed for wellness promotion & disease prevention

# Issues with Complementary & Alternative Medicines

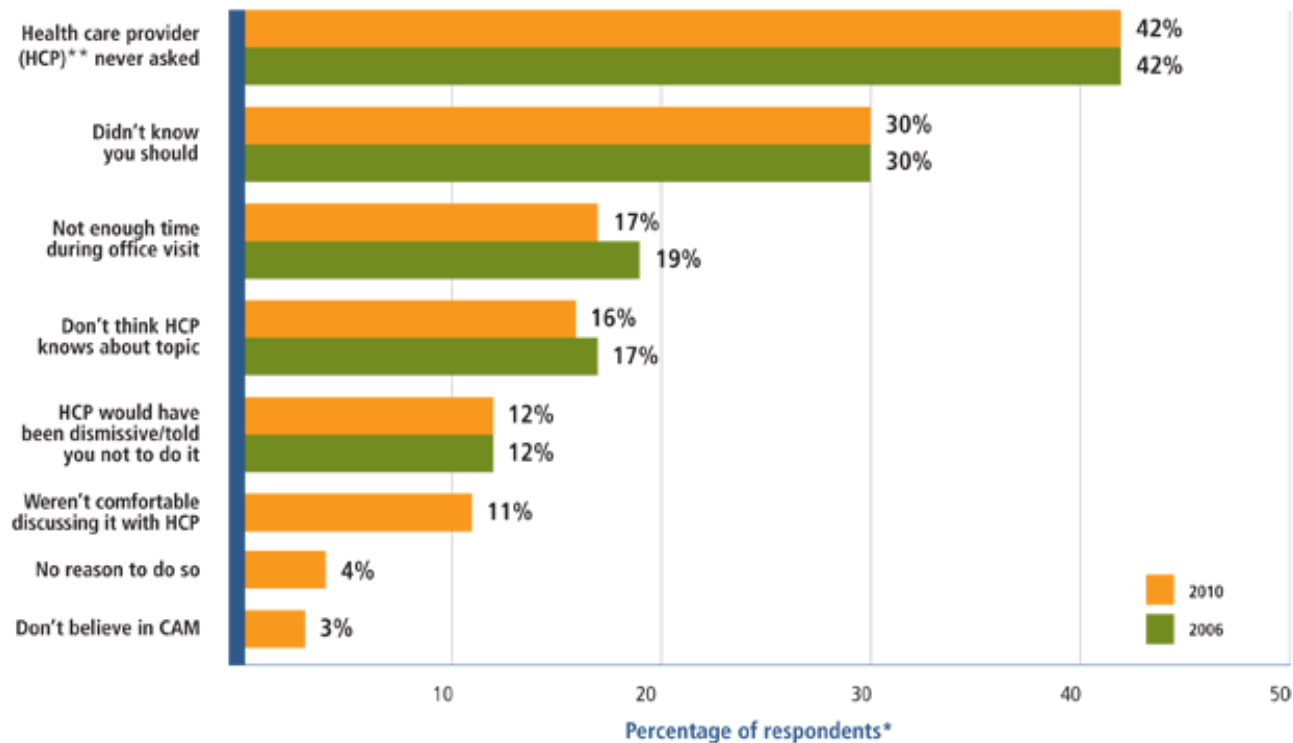
- Lack of awareness that patients are using
- Unregulated compared with conventional medicines
- Safety?
  - of products/approaches themselves
  - of combining with conventional medicines
- Effectiveness?



*Natural does not  
necessarily = safe*

# Awareness

## Reasons CAM Was Not Discussed With Health Care Provider



\*Base: Respondents who have never discussed CAM with a health care provider. 2010: n=656; sampling error =  $\pm$  3.8 percentage points. 2006: n=1,097; sampling error =  $\pm$  3.0 percentage points.

\*\*The term "health care provider" was used in the 2010 survey; "doctor" was used in the 2006 survey.

Source: AARP/NCCAM Survey of U.S. Adults 50+, 2006 and 2010

# Safety

- Relative safety dependant on type of complementary approach; internal products inherently more risky
- General lack of testing & long-term safety data
  - + different manufacturers, different spp., parts of plant, combinations etc.
  - Mr E – combining products that contain the same things (Go Healthy Prostate Protect & Prostachoice)
  - Mrs McG – Remifemin for hot flushes – “mystery dose” oestrogen + LFT derangement
- Type A & Type B ADRs possible (re. Linda from earlier )
- Examples:
  - Bee products – hypersensitivity reactions
  - Adulterated Chinese herbal medicines (e.g. containing sildenafil, tadalafil)
  - Kava and liver toxicity
  - Black cohosh – phototoxicity rxns, liver toxicity

# Safety (cont'd)

- (Report suspected ADRs to CARM – only 0.3% of reports to CARM in 2014 involved CAMs)
- Opportunity cost/harm from ineffective treatment
  - Mr A - “sodium bicarbonate/”alkalinisation of the body” to tx cancer/”Simoncini cure”
  - Mr D – using unproven red yeast rice product instead of statin due to fear of ADRs (high CVR)
- **Interactions** with conventional or other complementary medicines
  - Most serious/life-threatening interactions involve **ANTICOAGULANTS, DIGOXIN, ANTIDEPRESSANTS**, cyclosporin & protease inhibitors taken with **ST JOHN’S WORT**
  - WARFARIN+ ANYTHING – BE CAREFUL!!!
  - Mr McC – significant thrombocytopenia ?related to combination CAMs with antiplatelet effects (resolved on discontinuation)
  - Mrs W – Random and inconsistent use of multiple CAMs → interaction with warfarin → unstable INR
- Resources include
  - <http://www.medsafe.govt.nz/publications/prescriber-update-index.asp>

# CAM - Effectiveness

- Remember hierarchy of evidence:
  - Systematic Review/MA > RCT > Non-randomised studies > consensus opinion
- Anecdotal claims & testimonials are only very weak forms of evidence
- Key questions about safety and efficacy of most CAM therapies yet to be answered
- Sources of information/Resources
  - Be careful with marketing information (NuZeaCal case)

|  |
|--|
| <a href="#">Home</a>                   |
| <a href="#">Profile</a>                |
| <a href="#">TWOO Shop</a>              |
| <a href="#">Pricing &amp; Postage</a>  |
| <a href="#">TWOO Club</a>              |
| <a href="#">BLOGS</a>                  |
| <a href="#">Nuzeacal</a>               |
| <a href="#">Osteoporosis</a>           |
| <a href="#">Vitamin D</a>              |
| <a href="#">Joint Powder</a>           |
| <a href="#">Chondroitin Complex</a>    |
| <a href="#">Super Capsule</a>          |
| <a href="#">Omega 3</a>                |
| <a href="#">Nuzeaheme</a>              |
| <a href="#">Deer Velvet</a>            |
| <a href="#">Calcium Research</a>       |
| <a href="#">FAQ</a>                    |
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**The latest addition to the product range is NuZeaCal**

This deer antler based product contains.

Calcium and phosphorus in the Microcrystalline Hydroxyapatite form (similar to how it is held in human bone) which is a scientifically proven superior form of calcium supplementation plus

- Collagen
- Amino acids
- Glycosaminoglycans
- Full range of trace minerals essential for healthy bones
- Strong bioactives that strengthen bone

**NO OTHER CALCIUM SUPPLEMENT HAS THIS RANGE OF BENEFITS PARTICULARLY THE PATENTED BIOACTIVE**

If you are concerned at recent research from Auckland University on the effect of calcium supplements on the likelihood of heart attacks or strokes you should consider this product.

It is in a food form not a chemical product such as calcium carbonate. Check the blogs section on the side



**Bottom line: delivers 95-120mg elemental Ca + 200IU vitD3**

- Blood Sugar w/ Gymnema Extract
- Ingredients:
- Vitamin A 1505IU
- Chromium 300mcg
- Cinnamon (bark) 400mg
- Fenugreek Extract (seed) 210mg
- Nopal Opuntia spp. (leaf pad) 150mg
- Bitter Melon Momordica charantia extract (fruit) 150mg
- Gymnema Sylvestre extract 75% Gymnemic Acid (leaf) 100mg
- Bilberry (leaf) 100mg
- NFS Allergy Manager – Hayfever & Sinus Support
- Contains:
- Horseradish ext. equiv. root dry 2,000mg
- Garlic ext. equiv. bulb dry 1,000mg
- Thyme ext. equiv. leaf dry 500mg
- Fenugreek ext. equiv. seed dry 500mg
- Marshmallow ext. equiv. root dry 255mg
- Histidine 100mg
- Ascorbic acid (Vit C) 80mg
- Quercetin 50mg
- Betacarotene 2mg
- HS II
- Each 2 capsules contains:
- A proprietary blend containing 920mg. Hawthorn Berries (Crataegus oxyacanthoides), Capsicum Fruit (Capsicum Annum), Garlic Bulb (Allium Sativum),
- Thompson's B Complex
- Active Ingredients:
- Thompson's B Complex contains
- Vitamin B1 (Thiamine) 5mg
- Vitamin B2 (Riboflavin) 5mg
- Vitamin B3 (Niacinimide) 25mg
- Vitamin B5 (Pantothenic Acid) 7.5mg
- Vitamin B6 (Pyridoxine) 5mg
- Vitamin B12 (Cobalamine) 5mcg
- Biotin 20mcg
- Choline Bitartrate 25mg
- Folic Acid 150mcg
- Inositol 25mg

- Thompson's Natural E
- Active Ingredients:
- Vitamins d-alpha Tocopherol 210.7mg equivalent Vitamin E 200IU
- Mixed Tocopherols Beta, gamma & delta Tocopherols 50mg
- Minerals Selenium Methionine (Selenium) 1.3mg
- Malcolm Harker Emphysemol 985
- Contains:
- Elecampane, Ginger, Lobelia, Turpentine-pine resin, Clove, Manuka, Kumurahou, Comfrey, Peppermint, Juniper, Cayenne, Camphor, Eucalyptus, Licorice, Kelp, Potassium Chloride, Potassium Iodide, Celtic seasalt, Vitamin C, and E, Jojoba oil, Hydrogen Peroxide, UV-purified/grander-enhanced rainwater.
- Uri Cleanse Urinary Care
- Ingredients (per capsule):
- Herbal extracts equivalent to dry:
- Vaccinium macrocarpon fruit (Cranberry) 10g
- Arctostaphylos uva-ursi Leaf (Bearberry) 200mg
- Agathosma betulina Leaf (Buchu) 300mg
- Hydrastis Canadensis Root (Golden Seal) 50mg
- Centella asiatica Leaf (Gotu Kola) 100mg
- Olea europea Leaf (Olive) 100mg
- Vitamins & Minerals:
- Vitamin C (Ascorbic Acid) 50mg
- Zinc Gluconate (Equiv Zinc 5mg) 39mg
- Micro-genics Cod Liver Oil Fortified Strength
- Contains:
- Cod Liver Oil 275mg
- Fortified to supply Vitamin A (Retinyl palmitate) 4000IU
- Vitamin D3 (Cholecalciferol 10mcg) 400IU
- Olbas Oil
- Active ingredients (w/w):
- Cajuput oil BPC 18.50%, Clove oil BP 0.10%, Eucalyptus oil BP 35.45%, Juniper berry oil BPC '49 2.70%, Menthol BP 4.10%, Dementholised Mint oil BP 35.45%, Wintergreen oil BPC '49 3.70%

# What to do when there is a problem:-

- IDENTIFY & DOCUMENT PRODUCT & DOSE
- SAFETY MONITORING
- DISCONTINUE CAM
- RESEARCH/SEEK ADVICE
- DOCUMENT & REPORT

# Cases

- Mr A - ?sodium bicarbonate/"alkalinisation of the body" to tx cancer
- Mr D – using unproven red yeast rice product instead of statin due to fear of ADRs (high CVR)
- Mr E – combining products that contain the same things (Go Healthy Prostate Protect & Prostachoice)
- Mr McC – significant thrombocytopenia ?related to combination CAMs with antiplatelet effects (resolved on discontinuation)
- Mrs McG – Remifemin for hot flushes – “mystery dose” oestrogen
- Mr M – NuZeaCal – marketing and production issues (bottom line delivers 95-120mg elemental Ca + 200IU vitD3) (pt concerned about potential side effects of alendronate)
- Mrs W – Random and inconsistent use of multiple CAMs → interaction with warfarin → unstable INR
- Mrs W – “colours”

# More Contexts:-

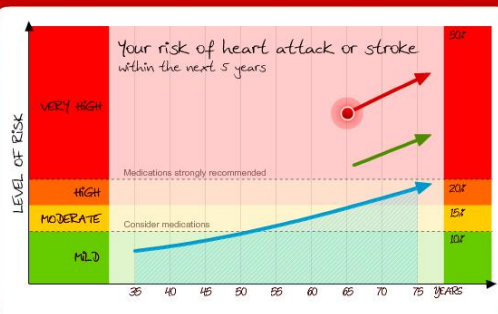
- Cardiovascular risk management & Diabetes
- Falls & fracture prevention
- Chronic pain
- Sleep hygiene
- Depression & Anxiety
- Gout
- Managing menopausal symptoms
- ?others

# Cardiovascular Risk Management

- % RR related to medication? – statins, aspirin etc.
  - e.g. BP falls 0.5-2mmHg/1kg of weight lost &
  - ↓4-5mmHg where BP > 140/90 → 42%↓ stroke & 14↓ MI
  - Cf. Effectiveness (and risks) of antihypertensive Rx
- “Lifestyle optimisation”
  - Smoking
  - Obesity
  - Alcohol
  - Inactivity
  - Stress
  - <http://www.evanshealthlab.com/23-and-12-hours/>

# Your HEART FORECAST

Heart Foundation THE UNIVERSITY OF AUCKLAND ENIGMA+  
About - Terms - Exclusions - Thanks



**What if?**  
See for yourself how changes in your lifestyle can influence your risk of a heart attack or stroke.

☒ If you quit smoking (long term)

If your blood pressure changes:

120 130 140 150 160 170

If your cholesterol ratio changes:

4.0 5.0 6.0 7.0 8.0

RESET

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# Pain Management

- Challenges
  - Significant risks with analgesics
  - Chronic pain cases – more medication might not be better for patient overall
- [https://www.youtube.com/watch?v=C\\_3phB93rvI](https://www.youtube.com/watch?v=C_3phB93rvI)
  - “Understanding pain in less than 5 minutes and what to do about it”

# Sleeping



**SAFER<sup>®</sup>**  
SAFER USE OF HIGH RISK MEDICINES

**Waitemata**  
District Health Board  
Te Wai Awhina

## HYPNOTICS

### Sleep Hygiene\*

|   |
|---|
| <b>ASLEEP</b> is a useful acronym for remembering sleep hygiene tips.   |
| <b>A</b> lcohol, caffeine and nicotine should be avoided, especially in the evening   |
| <b>S</b> leep and sex should be the only uses of the bed, make sure your bed environment is comfortable   |
| <b>L</b> ean laptops, TV and paperwork out of the bedroom and keep clocks out of sight, blue light from phones, computers and TV can exacerbate insomnia  |
| <b>E</b> xercise regularly and be active during the day, spending time outdoors if possible   |
| <b>E</b> arly rising – avoid sleeping-in or daytime naps, get up at the same time each day  |
| <b>P</b> lan for bedtime – establish a bedtime routine to wind down such as having a warm drink or a bath, avoid going to bed until you are drowsy  |
| Talk to your doctor about changing specific habits that may affect your sleep. It can be very helpful to learn relaxation skills or try other techniques such as sleep restriction or cognitive behavioural therapy, which may need referral to a psychologist or sleep specialist. |

Adapted from Cope © RPS 2008 14.4-11

What would happen if 100 people aged over 60 years take sleeping tablets for more than a week? <sup>11</sup>



Adapted from Grace, et al. BMJ 2009;339:1149-75

[CLICK HERE FOR FURTHER INFORMATION ON HYPNOTICS AND A FULL REFERENCE LIST](#)

For further information on other high-risk medicines visit our website at: [www.saferx.co.nz](http://www.saferx.co.nz)

No: 2182-01-081, issued June 2011, Review April 2016  
DISCLAIMER: This information is provided to assist primary care health professionals with the use of prescribed medicines. Users of this information must always consider current best practice and use their clinical judgement with each patient. This information is not a substitute for individual clinical decision making. Issued by the Quality Use of Medicines Team at Waitemata District Health Board; email: [feedback@saferx.co.nz](mailto:feedback@saferx.co.nz)

## Challenges:

- Risks of hypnotics outweigh benefits to sleep quality
- Alternatives not a quick fix & require motivated patient

# Depression & Anxiety

- *“For patients with mild to moderate unipolar major depression, the evidence indicates that the efficacy of psychotherapy compared with antidepressants at the end of treatment is generally comparable” (UptoDate)*
- Significant ADR risk associated with drug treatments
- Access to non-medicine-based therapies in practice - issues
- On-line Resources for clinicians and patients
  - Beating the Blues <http://www.beatingtheblues.co.nz>
    - On-line CBT treatment programme for depression & anxiety in primary care
  - Depression.org.nz
    - Part of national PH campaign “National Depression Initiative”

# Falls & Fractures

- 3 primary risk factors for falls
  - Poor balance
  - Muscle weakness
  - **Taking more than 4 prescription medicines**
- Vs fracture prevention drugs in people who fall –
  - Time to benefit
  - Adherence issues



# HRT

- Australasian Menopausal Society online resources

<http://www.menopause.org.au/for-women>

# Specific Cultural Contexts

- Tangata whenua
  - Rongoā
- Pasifika
  - High relative rate of non-collection of Rx items
- Asian
  - TCM – concept of what is medicine
- Muslim
  - Ramadan/fasting and adherence (timing)
  - Alcohol in inhalers e.g. Respigen/Salamol vs. Ventolin
    - alcohol free