Welcome to the first edition of Respiratory Research Review, a unique New Zealand respiratory publication bringing you the most important scientific research from around the world every month.

The Respiratory Research Review has been established to help make life easier for the respiratory medicine community in New Zealand. Every month around 10,000 scientific publications are printed worldwide containing a multitude of new studies from several countries. Many contain a few papers on respiratory medicine and several others are devoted entirely to respiratory research. In short, keeping up is hard and requires significant devoted time to screening out what is irrelevant to your practice or your country. In essence we want to save you time sorting the 'wheat from the chaff' so you can spend more time doing what you’re best at.

The Respiratory Research Review is a summary of what we think are the most significant recent published trials with a local commentary on why they are important and how they can potentially affect practice. Selection and review of...
NATURAL REMEDIES THAT REALLY WORK
A NEW ZEALAND GUIDE

What medical research actually says about natural health products and therapies

DR SHAUN HOLT
Overview

- Need for evidence-based natural health info
- The middle ground
- Pharmaceuticals from natural products
- Good and bad research
- Natural health research
- Top 5 studies 2007 & 2008
YOUR DISAPPEARING LOCAL DOCTOR
A SPECIAL MAIL INVESTIGATION

Home Secretary reveals his true views on immigration to Labour activists

CLARKE: WE WANT MORE REFUGEES

Foxy J-Lo fuels the fur debate
13/5 – exercise stops cancer
16/5 – tomatoes stop heart attacks
23/5 – soya may be bad for you
29/5 – need more sun exposure for vit D
13/6 – folate may stop cancer
13/6 – aspirin may stop colon cancer
13/6 – beer for menopause
19/6 – sleep with light on causes breast cancer
20/6 – eggs protect heart and may stop cancer
23/6 – spinach for slimming
27/6 – herbal diet pills don’t work
27/6 – sauerkraut stops cancer
28/6 – mushrooms stop cancer and make you look younger
30/6 – pomegranate juice for prostate cancer
1/7 – bad sunblocks lead to skin damage
3/7 – sunbathing reduces cancer risk
4/7 – mammograms cause breast cancer
5/7 – hair dyes cause cancer
11/7 – dogs prevent cancer
11/7 – herbal tea prevents breast cancer
11/7 – manuka honey is the answer for everything
18/7 – fish oil prevents bowel cancer
19/7 – sun bad for you
2/8 – exotic mushrooms fight cancer
3/8 – vitamin supps may do more harm than good
3/8 – breastfed children cope better with stress
4/8 – curry stops Alzheimers
7/8 – divorce leads to heart disease
20 Things The Daily Mail Say Will Cause Cancer

1. FACEBOOK
2. WINE
3. A COLD
4. DEODORANT
5. CHIPS
6. ORAL SEX
7. VITAMIN E
8. SAUSAGES AND BURGERS
9. SOUP
10. HAIR DYE
11. MOUTHWASH
12. SUN CREAM
13. PRINGLES, HULA-HOOPS & PRINCE CHARLES’ ORGANIC CRISPS
14. X-RAYS
15. TALCUM POWDER
16. MOISTURISERS
17. MOBILE PHONES
18. RED MEAT
19. TOOTH WHITENER
20. CHOCOLATES AND BAGGED SNACKS
SOMETHING SCIENTISTS TOLD YOU WAS BAD FOR YOU, IS IN FACT GOOD FOR YOU

by Our Health Staff Hugh Nose

SCIENTISTS have today revealed that something that was previously thought to be bad for you is, in fact, good for you.

On Other Pages • Something that was thought to be good for you is, in fact, bad for you • Something that was thought to be bad for you that was revealed to be good for you is actually revealed to be bad for you.
Regular e-journal summarizing natural health products shown to work in good research

Free to subscribe or download

Supported by ads, independent content
What is Natural Health?

- Self-care system of natural therapies concerned with building and restoring health and wellness via prevention and healthy lifestyles.

- Includes diet, exercise, naturopathy, massage, relaxation techniques, acupuncture, aromatherapy
The Middle Ground

Advocates

Evidence-based natural health

Skeptics
General practitioners’ attitudes toward (and use of) complementary and alternative medicine: a New Zealand nationwide survey

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Pharmaceuticals and natural products

• ¼ prescription drugs directly from plants or chemically modified versions
• > ½ modeled on natural compounds
< 1% rainforest plants have been tested

- Plants have been evolving chemical defense mechanisms for millions of years
- Chemicals often toxic but some can be used/modified to treat disease
Pharmaceuticals and natural products

• Morphine, cocaine, digitalis, quinine, tubocurarine
• Useful themselves or basis for synthetics
• Recently example is anticancer drug Taxol, from yew tree
Bacteria and fungi

- Made for advantage in microbiological world
- Screening since discovery of penicillin
- Soil & water samples tested from all over world
- Antibacterial agents eg. cephalosporins, tetracyclines, chloramphenicol
Pharmaceuticals and natural products

- Coral, sponges, fish, and marine microorganisms produce many potent chemicals
  - eg curacin A, from a marine cyanobacterium, has potent antitumor activity
Venoms and toxins

- From animals, plants, snakes, spiders, scorpions & insects
- Act on receptors, ion channels, and enzymes
- e.g. venom of Brazilian viper was lead compound for cilazapril and captopril
Venoms and toxins

- Neurotoxins from *Clostridium botulinum* injected into muscles to prevent muscle spasm
Asthma Treatments

Late 1800’s – bovine adrenal gland extract

2007 – inhalers delivering both a corticosteroid and a long-acting beta-agonist
Bovine adrenals

Cortex – steroids

Medulla - adrenaline

Modern inhaler

Eformoterol – similar to adrenaline

Budesonide – steroid
Good research

The Scientific Method

Peer review

Levels of evidence
The Scientific Method

- 1800 - life expectancy in France just under 30 years, England 36
- 1950 - high 60s in England and France
- Reason: scientific and industrial revolution
- Most important: reduction in death in infancy
Not only will a poor man have more chance of entering the kingdom of heaven... he'll also get there sooner.
Early medicine
The Scientific Method

- Hypotheses
- Procedures (Experiments)
- Data (Results)
- Findings (Conclusions)
Most scientists regarded the new streamlined peer-review process as ‘quite an improvement.’
Levels of Evidence

**Level 1**  Large RCT or meta-analysis

**Level 2**  Small RCT

**Level 3**  Non-randomised trials, cohorts, case series, case-control studies

**Level 4**  Expert authority opinion

**Level 5**  Expert opinion
Bad Research

Small studies
In vitro or animal
Not controlled
Associations, not causes
Bad reporting
Need studies in humans
Placebo Effect

WHO CARES IF IT'S THE PLACEBO EFFECT IF IT WORKS!?
Natural history

Graph 1: Percentage of affected patients over weeks after onset of acute otitis media.

Graph 2: Patients with continuing symptoms of CFS over months following diagnosis.
Bad Research

- Do colour television sets help premature babies survive?
Association different to cause!

- **Associations** may give clues, but may not necessarily be *causal* relationship

- eg. test people with Alzheimer’s for levels of 40 different vitamins & minerals

- Expect 2 of the 40 may be out of the normal range by chance
Badly reported research

“Low zinc causes Alzheimer’s”

“Selenium supplements may prevent Alzheimer’s”
Lyprinol and cancer 1999

- One small in vitro study
- Reported in media as cure for cancer
- ? Honest mistake or deliberate scam
- Gave other natural product companies a bad name
Natural Health Research - Patents

• Patent: set of exclusive rights granted by a state to the inventor for a fixed period of time

• Invention: *new*, inventive, and useful or industrially applicable
Natural Health Research

- Does scientific method apply to natural health?
Which outcome measures?

- Holistic approach to healing
- Multiple biological, psychological and social factors are interlinked
Natural Health Research

- Can have treatments even if science is not understood
The Solution?

• Well-conducted studies with appropriate outcome measures
  • eg. Quality of life
Top 5 Natural Health studies 2007
Effects of Folic Acid Supplementation on Hearing in Older Adults

Slowed the decline in hearing associated with aging
Helicobacter pylori Eradication: A Randomized Prospective Study of Triple Therapy Versus Triple Therapy Plus Lactoferrin and Probiotics

Addition of lactoferrin and probiotics increased eradication rate from 76% to 92%
Current Role of Glucosamine in the Treatment of Osteoarthritis

Positive effects on knee osteoarthritis symptoms and structure
Fish Consumption, n-3 Fatty Acids, and Subsequent 5-y Cognitive Decline in Elderly Men

Fish consumers had less 5-y cognitive decline than non-consumers
Evaluation of Echinacea for the Prevention and Treatment of the Common Cold: a meta-analysis

Echinacea reduces the chance of getting a cold by 58%, shortens duration by 1.4 days
Top 5 Natural Health studies 2008
Probiotic food supplement reduces stress-induced gastrointestinal symptoms

*Lactobacillus acidophilus* and *Bifidobacterium longum* significantly reduced stress-induced gastrointestinal symptoms
Effect of Honey, Dextromethorphan, and No Treatment on Nocturnal Cough and Sleep Quality for Coughing Children and Their Parents

Honey may be a preferable treatment for the cough and sleep difficulty associated with childhood upper respiratory tract infection.
Effect of n-3 polyunsaturated fatty acids in patients with chronic heart failure

Omega-3 can provide a small beneficial advantage in terms of mortality and admission to hospital for cardiovascular reasons in patients with heart failure
Effects of acupuncture on rates of pregnancy and live birth among women undergoing in vitro fertilisation

Complementing the embryo transfer process with acupuncture was associated with significant and clinically relevant improvements in clinical pregnancy
Comparison of therapeutic effects of omega-3 fatty acid eicosapentaenoic acid and fluoxetine

EPA and fluoxetine had equal therapeutic effects in major depressive disorder. EPA + fluoxetine combination was superior to either of them alone.
Thank you
Let’s debate!

• Should doctors recommend homeopathy & chiropractic?

• Can we accept less evidence for natural treatments?

• Ethical to use placebos in medical practice?

• Should everyone take multivitamin and fish oil?