

# FOCUS ON VEGETARIAN NUTRITION

by Dr Bevan Hokin

## INTRODUCTION

The 5th International Congress on Vegetarian Nutrition, hosted at Loma Linda University, California from March 4-6 this year, attracted over 700 delegates from 44 countries. A sample of abstracts from the 57 papers and 48 posters presented, follow here:

## KEY ABSTRACTS

### VEGETARIAN DIETS AND HEALTH OUTCOMES — WHAT WE KNOW AND WHERE DO WE GO FROM HERE?

Professor Gary E. Fraser MBChB PhD MD

Research to establish the health effects of vegetarian diet has taken a quantum leap as “new generation” studies are starting to report results. The definition of a “vegetarian” requires careful consideration, as this label includes many diverse diets with the focus in these definitions being only on meat. Persons with similar habits of meat consumption can differ greatly in the quality of the rest of their diets. It is likely that vegetarians in different parts of the world have very different diets, and will probably experience different health outcomes as a result. At present, apparently good studies do not always agree about the health experience of vegetarians. What does seem clear and consistent is that vegetarians are less likely to be overweight, have lower blood pressure and LDL cholesterol, and lower rates of diabetes mellitus. Whether vegetarians have lower rates of cancer is somewhat more controversial. Californian Adventists who are vegetarians have significantly lower risk of bladder, ovarian, and possibly prostate cancer, along with colon cancer. However, studies of British vegetarians do not clearly find such results. This may be due to differences in other parts of the diet and lifestyle of these two cohorts of vegetarians. Similarly, studies of Californian Adventists indicate that the absence of meat in the diet, regular nut consumption, and medium body weight—all characteristic of many vegetarians, add about 6 years to life expectancy.

### WALNUTS VERSUS FATTY FISH AND CVD RISK FACTORS

Dr Sujatha Rajaram PhD

This study compared the effect of n-3 poly-unsaturated fatty acids (n-3 PUFA) from two different food sources: walnut (ALA) and fatty fish (EPA + DHA) on plasma lipids in normal to moderately hyperlipidaemic individuals. In a randomized crossover feeding trial, 25 normal to moderately hyperlipidaemic adults consumed three isoenergetic diets for four weeks each: control diet (no nuts or fish); walnut diet (42.5 g walnuts/2400 kcal, 6 d/wk) and fish diet (113 g salmon, 2 d/wk). Fasting blood samples were drawn at the end of each diet period on two alternate days and analyzed for plasma lipids. The walnut diet significantly reduced serum total and LDL cholesterol by 5.4% and 9.3% compared to the control diet, while the fish diet increased LDL cholesterol compared to the control diet. The fish diet also increased HDL cholesterol while decreasing triglyceride (11.4%) compared to the control diet. Both LDL: HDL and apo B: A-1 ratios were significantly lower after the walnut compared to the control and fish diets. N-3 PUFA derived from fatty fish and walnuts influence different blood lipid components and they both help in reducing the overall risk of CHD.

### MEAT CONSUMPTION AND THE RISK OF CANCER: A META-ANALYSIS OF CASE-CONTROL AND COHORT STUDIES

Dr Dagfinn Aune PhD, Dr Marit B. Veierød PhD, Dr Giske Ursin PhD

*Background:* The relationship between meat consumption and cancer risk has been investigated in many studies, but the results have been inconclusive for several cancer sites. To clarify this relationship we conducted a systematic review of meat consumption and cancer risk at all the sites, which had been investigated by a minimum number of five studies.

*Materials and methods:* The analysis was conducted by first searching several databases for studies on meat consumption and cancer risk, from their inception to October 2007. Risk ratios, incidence rate ratios and odds ratios were pooled by use of a random - effects model.

*Results:* There was an increased risk of cancer of the lung, pancreas, liver, colorectum, breast, ovaries, endometrium, prostate and kidney with a high total meat intake. Higher intake of red meat was associated with increased risk of cancer of the mouth and pharynx, esophagus, lung, stomach, pancreas, colorectum, breast, endometrium, kidney and of non - Hodgkin's lymphoma, while higher intake of processed meat was associated with increased risk of cancer of the mouth and pharynx, nasopharynx, larynx, esophagus, stomach, pancreas, colorectum, breast, prostate and adult and childhood (maternal intake during pregnancy) brain cancer. In addition, several individual meat items were associated with increased risk of some types of cancer. For some sites and meat types there were discrepancies between the results from case - control and cohort studies or there was unexplained heterogeneity.

*Conclusion:* It seems likely that reducing meat consumption will decrease the risk of cancers of the breast, lung, pancreas and stomach and very likely that colorectal cancer risk will be reduced.

## CONCLUSIONS

There continues to be much research interest in vegetarian and vegan diets, with key topics including the relative risk of heart disease and cancer; the importance of plant - based versus fish-sourced poly-unsaturated fatty acids; the sources, role and importance of calcium and vitamins B12 and D in vegetarians diets; and the quality of life of the additional years enjoyed by those consuming a predominately plant based diet.

## REFERENCES

A complete list of paper and poster abstracts may be found at: <http://www.vegetariannutrition.org> and click on the heading “View printed programme”.



**DR BEVAN HOKIN**

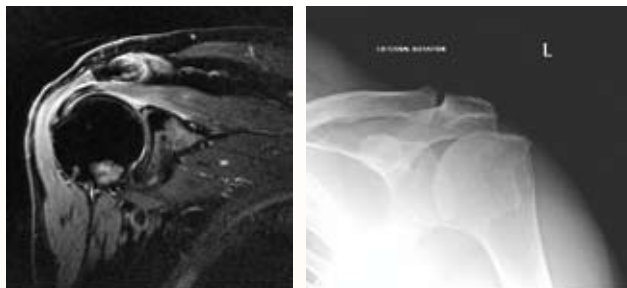
PhD MAppSc BSc

DIRECTOR OF THE PATHOLOGY LABORATORIES AT SYDNEY ADVENTIST HOSPITAL

Dr Hokin can be contacted on 9487 9511

# THE PROBLEM SHOULDER

by Sarah Morrison



• Pictures courtesy of San Radiology

## DIAGNOSIS AND MANAGEMENT OF SHOULDER IMPINGEMENT

Shoulder pain accounts for 1% of all conditions seen by the GP<sup>1</sup>, and shoulder impingement accounts for half of these referrals.<sup>2</sup> Some studies suggest that one in three people will suffer shoulder pain in their lives. In addition the high morbidity of shoulder problems means that symptoms can last between 12-18 months in 50% of patients.<sup>3,4</sup> The incidence of rotator cuff tears is also high with one cadaveric study showing that 40% of patients older than 60 had full thickness rotator cuff tears and a higher incidence of partial thickness tears.<sup>5</sup>

Shoulder impingement can be defined as an encroachment of the rotator cuff tendons as they pass through the subacromial space, consisting of the acromioclavicular joint, acromion, coracoacromial arch and the glenohumeral joint.

### CLINICAL TESTS FOR IMPINGEMENT

Diagnosis of shoulder impingement is complicated by multiple causal factors/aetiology and lack of clinical test sensitivity and specificity.<sup>6</sup> For clinical tests to be diagnostically accurate they need to be sensitive and specific. Sensitivity is defined as the proportion of people with a pathology who have a positive clinical test result. Specificity refers to the proportion of people without a pathology who have a negative test result. Two of the most common tests used to diagnosis shoulder impingement, Neer's and Hawkins-Kennedy, have been shown to be highly sensitive (75% and 92%) however specificity was as low as 30.5% and 25% respectively.<sup>7</sup>

Therefore the clinical tests cannot confidently diagnose impingement, however if they are negative it suggests that impingement is unlikely.

## SYMPTOMS OF SHOULDER IMPINGEMENT

The most useful tool in diagnosis of the shoulder is the patient history. By questioning the patient on the mechanism of the injury, aggravating and easing factors, site of pain and occupation/sporting activities, an initial idea of diagnosis can be reached.

Indicative symptoms for shoulder impingement include:

- Age (thirties to mid - forties)
- Insidious onset or related to a specific incident i.e. overhead sport or occupation involving overhead activity
- Pain over lateral shoulder area which can radiate down arm
- Pain often described as 'catching'
- Painful arc on active movement
- Pain on overhead activities
- Occasional night pain (exclude frozen shoulder)

## TYPES OF SHOULDER IMPINGEMENT

The exact cause of shoulder impingement is unknown and it is thought to be a multi-aetiological pathology. Three types of impingement are described; primary, secondary and internal.

**Primary Impingement:** refers to anatomical changes causing impingement of the subacromial space, for example the shape of the acromion, bony spurs or degenerative or inflammatory changes causing thickening of the surrounding tissues, e.g OA of the acromioclavicular joint.

**Secondary Impingement:** normally affects the younger population and refers to problems such as rotator cuff weakness, poor scapula stability, shoulder laxity or instability, decreased capsular flexibility and postural factors causing the impingement.

**Internal Impingement:** this usually occurs in the throwing athletes when repetitive movements involving external rotation, abduction and extension associated with either anterior shoulder

capsule laxity or posterior capsule tightness causes impingement of the rotator cuff at the posterior - superior surface of the glenoid.

## TREATMENT OF IMPINGEMENT

Physiotherapy is usually the first line of treatment for shoulder impingement. Physiotherapists are ideally placed to evaluate and treat the causative factors by assessing posture and muscle weakness. Treatment options include local treatment such as capsular stretches, specific muscle strengthening, scapula setting as well as more global issues contributing to the problem, which include postural correction, proprioceptive re - education, core stability as well as addressing stiff surrounding joints such as AC joint, cervical and thoracic areas.

If conservative treatment fails then further diagnostic tests and possible surgical opinion may be required.

## REFERENCES

1. Green et al. (2003) Physiotherapy interventions for shoulder pain (Cochrane review) The Cochrane Library, Issue 3, Oxford, UK, Update Software.
2. Dinnes et al. (2003) The effectiveness of diagnostic tests for the assessment of shoulder pain due to soft tissue disorders: a systematic review. Health Technology Assessment. 7, 29.
3. Van der windt et al. (1996) Shoulder disorders in general practice: prognostic indicators of outcome. British Journal of General Practice. pp 519-523.
4. Sattelle et al. (1988) The Longterm Outcome of Rotator Cuff Tendinitis - A Review Study. British Journal of Rheumatology. 27, pp385-9.
5. Bigliani LU, Morrison DS. The morphology of the acromion and its relationship to rotator cuff tears. Orthop Trans. 1986;10:228.
6. Park et al. (2005) Diagnostic Accuracy of Clinical Tests for the Different Degrees of Subacromial Impingement Syndrome. J Bone Joint Surg Am; 87: 1446-1455
7. Calis et al. (2000) Diagnostic values of clinical diagnostic tests in subacromial impingement syndrome. Annals of Rheumatic Disease. 59, 44-47.



**SARAH MORRISON**  
BSc PHYS, MSc SPORTS PHYS  
PHYSIOTHERAPIST

Sarah Morrison qualified in 1994 and completed her Masters in Sports Physiotherapy in 2006. She joined the San Physiotherapy Department from the UK. Her experience has been focused on outpatients and orthopaedics and sporting populations, including rugby union teams for 10 years. Her special interests include management of acute injuries, shoulder impingement, orthopaedic rehabilitation, ACL reconstruction and acupuncture. She can be contacted on 9487 9350.