

University of Wollongong Research Online

Faculty of Social Sciences - Papers

Faculty of Arts, Social Sciences & Humanities

2012

Effect of 6 weeks consumption of b-glucan rich oat products on cholesterol levels in mildly hypercholesterolaemic overweight adults

Karen Charlton

University of Wollongong, karenc@uow.edu.au

Linda Tapsell

University of Wollongong, ltapsell@uow.edu.au

Marijka Batterham

University of Wollongong, marijka@uow.edu.au

Jane E. O'Shea

University Of Wollongong, janeo@uow.edu.au

Rebecca L. Thorne

University of Wollongong, beck@uow.edu.au

See next page for additional authors

Follow this and additional works at: <https://ro.uow.edu.au/sspapers>



Part of the [Education Commons](#), and the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Charlton, Karen; Tapsell, Linda; Batterham, Marijka; O'Shea, Jane E.; Thorne, Rebecca L.; Beck, Eleanor; and Tosh, Susan, "Effect of 6 weeks consumption of b-glucan rich oat products on cholesterol levels in mildly hypercholesterolaemic overweight adults" (2012). *Faculty of Social Sciences - Papers*. 579.
<https://ro.uow.edu.au/sspapers/579>

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: research-pubs@uow.edu.au

Effect of 6 weeks consumption of b-glucan rich oat products on cholesterol levels in mildly hypercholesterolaemic overweight adults

Abstract

Abstract presented at the Dietitians Association of Australia 16th International Congress of Dietetics, 5-8 September 2012, Sydney Convention & Exhibition Centre, Sydney, Australia

Keywords

adults, overweight, consumption, mildly, effect, hypercholesterolaemic, products, oat, cholesterol, levels, 6, weeks, b, glucan, rich

Disciplines

Education | Social and Behavioral Sciences

Publication Details

Charlton, K., Tapsell, L., Batterham, M., O'Shea, J. E., Thorne, R. L., Beck, E. & Tosh, S. (2012). Effect of 6 weeks consumption of b-glucan rich oat products on cholesterol levels in mildly hypercholesterolaemic overweight adults. *Nutrition and Dietetics*, 69 (Supplement S1), 15.

Authors

Karen Charlton, Linda Tapsell, Marijka Batterham, Jane E. O'Shea, Rebecca L. Thorne, Eleanor Beck, and Susan Tosh

168. EFFECT OF 6 WEEKS CONSUMPTION OF B-GLUCAN RICH OAT PRODUCTS ON CHOLESTEROL LEVELS IN MILDLY HYPERCHOLESTEROLAEMIC OVERWEIGHT ADULTS

KAREN CHARLTON¹, LINDA TAPSELL¹, MARIJKA BATTERHAM¹, JANE O'SHEA¹, REBECCA THORNE¹, ELEANOR BECK¹, SUSAN TOSH²

¹University of Wollongong, Australia

²Guelph Food Research Centre, Canada

Several regulatory bodies have approved a health claim on the cholesterol-lowering effect of oat β -glucan at levels of 3.0 g/day. This study aimed to test whether 1.5 g/day β -glucan provided as ready-to-eat (RTE) oat flakes was as effective in lowering cholesterol as 3.0 g/day from oats porridge. A 6-week randomised controlled trial was conducted in 87 mildly hypercholesterolaemic (≥ 5 mmol/L and < 7.5 mmol/L) men and women assigned to one of three diet arms (25% E protein; 45% E CHO; 30% E fat, at energy requirements for weight maintenance): (1) Minimal β -glucan (Control – C); (2) Low dose oat β -glucan (1.5 g β -glucan; Oats Low – OL) or (3) Higher dose oat β -glucan (3.0 g β -glucan; Oats High – OH). Changes in total and LDL-cholesterol (LDL-C) from baseline were assessed using a linear mixed model and repeated measures ANOVA, adjusted for weight change. Total cholesterol reduced significantly in all groups (-7.8 (SD = 13.8)%, -7.2 (12.4)% and -5.5 (9.3)% in OH, OL and C groups), as did LDL-C (-8.4 (18.5)%, -8.5 (18.5)% and -5.5 (12.4)% in OH, OL and C groups) but between-group differences were not significant. In responders only (n = 60), β -glucan groups had higher reductions in LDL-C (-18.3 (11.1)% and -18.1 (9.2)% in OH and OL groups) compared to controls (-11.7 (7.9)%; $P = 0.044$). Intakes of oat β -glucan were as effective at doses of 1.5 g/day compared to 3 g/day when provided in different food formats that delivered similar amounts of soluble β -glucan.

Contact author: Karen Charlton – karenc@uow.edu.au

163. EFFECT OF VIGNA SINENSIS ON INCREASED PRODUCTION OF BREAST MILK

TRI RATNA AIERTINI¹, OVA EMILIA², TOTO SUDARGO²

¹Health Polytechnic, Palangka Raya, Indonesia

²Gadjah Mada University, Yogyakarta, Indonesia

Deficiency of the production of breast milk can occur during lactation. In Central Kalimantan, Indonesia, 30% lactating women complained about insufficient milk production. This research aimed to contribute to the availability of breast milk in sufficient amount to help mothers successful in breastfeeding their babies exclusively by making use of *Vigna sinensis* to increase the production of breast milk. This study was quasi-experiment, conducted on 2011 with an intervention of administration of *Vigna Sinensis* compared to control group. Follow up was carried out to assess the breast milk production. This study location was in Central Kalimantan Province. The samples were as many as 134 persons meeting inclusion criteria, which were breastfeeding mothers, at term delivery with birth weight of ≥ 2500 gram, mothers' age 20–35 years, babies' age < 6 months and the babies having not received any additional food in addition to breastfeeding. The exclusive criteria were either mothers or babies who were sick, mothers who consumed alcohol and mothers who smoked. Data analysis use univariable, bivariable and multivariable. The result showed that after treatment, there was an increased production of breast milk in the intervention group as much as 262.96 ml while in the control group 126.46 ml. *Vigna Sinensis* could increase the production of breast milk 107.93% higher than the control group with $p = 0.0000$ ($p < 0.05$). This research concludes that mothers who consumed *Vigna Sinensis* had higher production of breast milk than those who did not.

Contact author: Toto Sudargo – toto_sudargo@yahoo.co.id

184. 'SPF' ON YOUR PLATE: THE NEW NUTRITIONAL PARADIGM OF COMPLEMENTARY SUN-PROTECTION

NIVA SHAPIRA

Rabin Medical Center/Beilinson Hospital, Israel

Skin cancer rates are epidemically climbing despite increasing awareness and external precautions, i.e. sun-screen/avoidance, warranting exploration of complementary strategies. The sun's damaging effect, including skin-penetrating ultraviolet-A radiation, involves photo-oxidation mechanisms that consume skin and plasma antioxidants. Dietary antioxidants – i.e. carotenoids, vitamins C and E, selenium, flavonoids, and polyphenols – have been shown to counteract sun damage, by reducing DNA fragmentation, inflammatory response, and immune suppression. The Greek-Mediterranean diet contains many sun-protective components, being high in antioxidants (fruits/vegetables, spices, red wine, olive oil) and anti-inflammatory n-3 polyunsaturated fatty acids (PUFA), and low in pro-inflammatory n-6-PUFA and pro-oxidants (red meat). Greece also has among the world's lowest melanoma incidence/100,000 (2.14 males, 2.99 females [2000]) vs. European average (6.32, 7.29 [2000]) and Israeli rates (17.06, 14.82 [2000]), with European-origin Israelis (33.6, 24.0 [2003–2004]) second only to Australians (39.80, 31.80 [2000]). Though skin pigmentation is a major factor, the question of protective potential of diet was raised. Women exposed to sun radiation (Baltic beach 4–6 h/day for 14 days) consuming water/cola (750 ml/day, n = 16) showed a gradual increase in blood plasma malondialdehyde levels 55.5% (8.36 to 13.0 $\mu\text{mol/L}$, $p \leq 0.02$), vs. antioxidant-fortified fruit juice (750 ml/day, n = 21) a 15.8% decrease (8.52 to 7.175 $\mu\text{mol/L}$), with aggregate between-group difference ~60%. Tomato paste (~16 mg/day lycopene, 10 weeks) was associated with 40% reduced ultraviolet-induced erythema. The above and extensive research suggests the Mediterranean diet may represent a gold standard for sun-protection. Complementary sun-protection by diet and relevant components for high-illumination geographical regions with special regard to immigrants, skin-type, and age-related sensitivity will be discussed.

Contact author: Niva Shapira – nivnet@inter.net.il

3.5 ***HOT TOPICS****

The abstracts for this session were not decided before publication

3.6 COMMUNITY BASED INTERVENTIONS 550. WHAT WORKS FOR COMMUNITY-BASED NUTRITION PROGRAMMING? DEVELOPMENT OF TECHNICAL SUPPORTIVE SUPERVISION IN OROMIA REGION, ETHIOPIA

MASAYO NAKAMORI¹, ABERA SEIFU², TAYE TOLERA², SHALLO DEBA²

¹JICA COBANA Project, Ethiopia

²Oromia Regional Health Bureau, Ethiopia

The Community Based Nutrition Approach (COBANA) Project in the Oromia Region, Ethiopia began activities in September 2008 for a period of five years. The Project aims to improve the nutrition status of children under five years old and pregnant and lactating women by strengthening community health services in three targeted zones and ten woredas in the region. As supportive supervision and mentoring community workers and supervision of the mother support groups are crucial to the success of community nutrition programs, the Project has conducted Technical Supportive Supervision (TSS) training for more than 550 related persons including health providers from the health facilities linked to the programme and implemented