

MUSHROOMS AND HEALTH GLOBAL INITIATIVE BULLETIN



An ISMS Global Initiative to increase the worldwide consumption of mushrooms through the collection, evaluation and dissemination of scientifically validated information.



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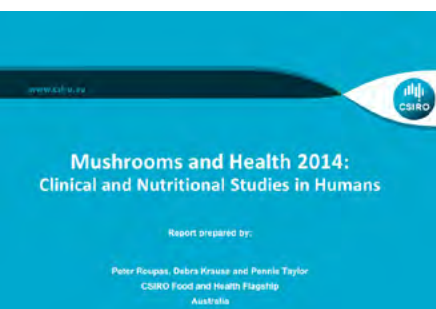
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NEWS FROM THE INITIATIVE

Mary Jo Feeney

The Bulletin provides ideas on how to communicate mushroom research.

Mushrooms and Health 2014: Clinical and Nutritional Studies in Humans



Mushrooms and Health 2014, a thorough review and evaluation of the state of the science linking mushrooms and health, is now posted on the Mushrooms and Health Global Initiative website (www.mushroomsandhealth.com). Since the initial Report in 2008, *Mushrooms and Health* has been updated in 2010, 2012 and now most recently in 2014 under the direction of Peter Roupas, PhD, Commonwealth Scientific and Industrial Research Organisation (CSIRO; www.csiro.au), Australia's largest and most diversified food research organization.

Mushrooms and Health 2014 differs somewhat from previous reports in that it focuses primarily on published human trials.

It also describes the levels of evidence where future human dietary intervention studies are warranted to substantiate the effects. The Report features:

- A listing of currently registered human trials.
- A section entitled "Bioactive Compounds and Proposed Mechanisms of Action" citing animal and *in vitro* studies that provide lower levels of evidence and insights into cellular mechanisms that may mediate potential human health.
- A section entitled "New Applications in Human Health" citing research on Brain Health/Cognition; Cancer Therapy Adjuvants; Respiratory Tract Infections; and Vaccine Adjuvants.

How to Access all the Mushrooms and Health Reports

Access all the *Mushrooms and Health Reports* through the [Mushrooms and Health Global Initiative](#) home page. Then click on the Mushrooms and Health Report tab to access the Report by year. Full reports from 2008, 2010, 2012, and 2014 are now posted for you to click on the section or individual topic of interest hyperlinked in the Report's Table of Contents.



Taken together, the *Mushrooms and Health Reports* represent the “Crown Jewel” of the Initiative. Be sure to take advantage of this reputable and ready resource to help you know and communicate the latest research on the role of mushrooms in health and nutrition.

Take advantage of this reputable and ready resource on mushroom research.

MUSHROOM RESEARCH



Role of edible mushrooms in health – recognized as a top downloaded article

Interest in mushroom research remains high. *The role of edible mushrooms in health: Evaluation of the evidence*, originally published in the *Journal of Functional Foods* in 2012, ranked number 8 in the Top 25 Hottest Articles downloaded from the journal during all of 2013. This review, prepared by the CSIRO team of Roupas, Keogh, Noakes, Margetts and Taylor, was a project of the Mushrooms and Health Global Initiative.

Click on the following links to read the variety of abstracts that discuss a wide range of topics.

Proceedings from the Mushrooms and Health Summit

Feeney MJ, Dwyer J, Hasler-Lewis CM, Milner JA, Noakes M, Rowe S et al. [Mushrooms and Health Summit Proceedings](#). *J. Nutr.* 144: 1128S–1136S, 2014. The article synthesizes the presentations during the U.S. Mushroom Council convened Mushrooms and Health Summit in Washington, DC September 2013.

Although mushrooms have long been regarded as health-promoting foods, research specific to their role in a healthful diet and in health promotion has advanced in the past decade. The earliest mushroom cultivation was documented in China, which remains among the top global mushroom producers, along with the United States, Italy, the Netherlands and Poland.

Although considered a vegetable in dietary advice, mushrooms are fungi, set apart by vitamin B-12 in very low quantity but in the same form found in meat, ergosterol converted with UV light to vitamin D2, and conjugated linoleic acid. Mushrooms are a rare source of ergothioneine as well as

selenium, fiber, and several other vitamins and minerals. Some preclinical and clinical studies suggest impacts of mushrooms on cognition, weight management, oral health, and cancer risk. Preliminary evidence suggests that mushrooms may support healthy immune and inflammatory responses through interaction with the gut microbiota, enhancing development of adaptive immunity, and improved immune cell functionality.

In addition to imparting direct nutritional and health benefits, analysis of U.S. food intake survey data reveals that mushrooms are associated with higher dietary quality. In addition, early sensory research suggests that mushrooms blended with meats and lower sodium dishes are well liked and may help to reduce intakes of red meat and salt without compromising taste. As research progresses on the specific health effects of mushrooms, there is a need for effective communication efforts to leverage mushrooms to improve overall dietary quality.

Kao CHJ, Bishop KS, Han DY, Murray PM, Glucina MP, Gareth J. et al. [A comparison of the gene expression profiles and pathway network analyses after treatment of prostate cancer cell lines with different *Ganoderma lucidum* based extracts](#). *Functional Foods in Health and Disease* 2014; 4(5):182-207. This is an Open Access article.

Ganoderma lucidum is a type of fungus commonly consumed in Asia for the promotion of health and longevity. The observed biological activity of *G. lucidum* includes anti-cancer and anti-inflammatory effects which may be useful in the treatment and prevention of cancer and other chronic diseases. *G. lucidum* grows under conditions which range from tropical to temperate and has a different physiology depending on the geographical region in which it is grown. Therefore, the health benefits may vary depending on the form of *G. lucidum* and the environmental conditions to which it was exposed.

The investigators studied the effect of wildy grown *G. lucidum*, from the Himalayan region versus other commercially available *G. lucidum* products, on two human cancer cell lines. All the *Ganoderma* extracts showed growth inhibition in the cancer cell lines tested. Using Affymetrix microarray analysis the investigators identified four main biologically active pathways: cell cycle control/apoptosis, cell-cell adhesion, DNA repair, and inflammatory/immune response, where activity was influenced by the *Ganoderma* extracts used. Using RT-PCR results supported the findings in the Affymetrix analysis, i.e. that *G. lucidum* extracts have an anti-inflammatory and cell cycle effect and therefore may have long term health benefits. These effects were specific to the extract tested.

NEWS FROM AUSTRALIA

Glenn Cardwell



Atlantis Healthcare Magazine

For the second time Atlantis Healthcare has asked us to write articles on mushrooms and their potential benefits in reducing the risk of breast and prostate cancer. The Australian branch of Atlantis Healthcare runs patient support programs, including educational magazines for patients. They have a medical editorial board that vets each magazine article, so the message gets assessed in the context of healthy eating. We have to take heart in that they have been interested in our story, twice!

Dietitians' promotion

Through our partnership with the Dietitians Association of Australia we have the opportunity to promote some of the latest mushroom research to the readers of their national newsletter. Dietitians have proven to be big supporters of mushrooms and are the ones most likely to mention via websites and magazines that mushrooms are a valuable source of vitamin D during the winter months.

Dietitians are valuable allies in promoting mushrooms.



Australia's Healthy Weight Week

Glenn Cardwell spoke to Home Economics teachers in South Australia about the health benefits of mushrooms. In the photo, mushroom farmer, Phil Rogers, explained how mushrooms were grown and the sustainability of his local farm.

Pam Tobin then encouraged the teachers to get their students involved in mushroom growing and cooking, explaining how she had been doing that with other schools around the capital city Adelaide. We even got one teacher to try her first mushroom! To her surprise, she loved it.



More about the Home Economics Institute of Australia (HEIA)

On speculation, we sent in an abstract to the national conference of the HEIA to alert home economists about mushrooms and why they are very different to vegetables. The abstract got accepted for a conference paper. The story got even better when we were also asked to write a 3000 word refereed paper on the health benefits of mushrooms, meaning that the message gets to every home economist in the country through their national journal later in the year.

Home economists love hearing the mushroom story and see an example of a growing bed.

NEWS FROM SPAIN

Maria Luisa Tello Martin and Irene Roncero Ramos



XVIII Vegetable Gastronomic Days

Once again, the vegetables were the stars of the gastronomic Rioja spring. Calahorra Hospital Foundation held its Vegetable Gastronomic Days from 21-27 April. The “City of Vegetables” promoted the quality and the variety of fresh products and exalted the perfect harmony between creativity and the traditional kitchen. The Minister of Health and Social Services of the Government of La Rioja, José Ignacio Nieto, along with the Calahorra Hospital Foundation manager, Alejandro López del Val, inaugurated the events organized by the hospital. Nieto visited the exhibition of old images related to mushroom cultivation, on loan from the Spanish Mushroom Growers Association (ASOCHAMP). The Calahorra Hospital Foundation developed a special menu with organic vegetables during the week that the conference was held.



Tastings, shows, a tapas route, cooking workshops, music and theater performances, and lectures were some of the activities that took place within the Vegetable Gastronomic Days. In total, eleven restaurants and eighteen catering establishments in Calahorra formed the tapas route and tasting menus, where people could enjoy over forty different vegetables tapas.

A Vegetable Market, which gathered more than twenty stands with all kinds of horticultural products, also had a “Tasting Corner.” A small replica of a vegetable garden, a greenhouse and even mushroom cultivation growing room were all on display.

Healthy Walking Tour



For the sixth consecutive year, the Department of Health and Human Services organized Healthy Walks in La Rioja to promote a healthy lifestyle in this region. The aim of these walks was to promote physical activity and healthy nutritional habits to prevent chronic diseases.

The sixth healthy walk this year took place on May 31st, which began in San Pedro Hospital at 18.30 (6:30 pm) and went through the city ending at the sport center Las Gaunas. The distance was 10.5 km (6.5 miles) approximately.

When participants reached the end of the walking tour, they practiced some stretching exercises with elastic bands led by expert sport trainers. Then the members of the organizing committee gave participants a glass with water-honey and some fruits. People also could enjoy a mushroom tasting organized by the Spanish Mushroom Growers Association with the collaboration of the Neighborhood Associations of Logroño.

In addition to mushroom tasting, the Spanish Mushroom Growers Association offered some information on mushrooms' nutritional and healthy properties and gave a cook book with

mushroom recipes to the attendees. Mushrooms, considered a healthy food, are an appropriate product to include in a healthy and nutritious diet.



Healthy Walk participants enjoy mushroom tasting...



...and learn about mushroom nutrition and health.

NEWS FROM THE UNITED KINGDOM

Stephen Allen



Just Add Mushrooms

The "Just Add Mushrooms" campaign promoted quick and easy mushroom recipes to enjoy while watching World Cup soccer.

The "Just Add Mushrooms" campaign is aimed at infrequent consumers of mushrooms, 25-45 years old. It uses the power of celebrity to engage shoppers and provides very simple recipes that can be created quickly and do not need advanced cooking skills. The campaign runs in UK & Ireland and has gathered nearly 75,000 likes on its Facebook page.

NEWS FROM THE UNITED STATES

Heidi Gengler and Michelle Green



Getting Published: The story behind the Mushrooms and Health Summit Proceedings

In September 2013, the U.S. Mushroom Council (Council) hosted the inaugural Mushrooms and Health Summit, convening top scientists, nutritionists, policy makers, government officials, academics and health experts to examine the global research that links mushrooms to today's and future health issues. Since then, the Council has leveraged this event to fuel what has been dubbed as a "second harvest" of opportunity. The quintessential follow up piece, the official Mushrooms and Health Summit Proceedings, was published in the July issue of the *Journal of Nutrition* (JN). The abstract appears in the Mushroom Research section of this *Bulletin*, and can be accessed [here](#).

This proceedings article is significant in the ways it has and will help the Mushroom Council advance its agenda via nutrition and media initiatives. Synthesizing the collection of research presented at and supporting content from the summit, this document provides a way to bring the summit information to the influencers and researchers worldwide. Having the summit proceedings published in the *Journal of Nutrition* is a testament to the validity and credibility of the deep collection of existing mushroom research.

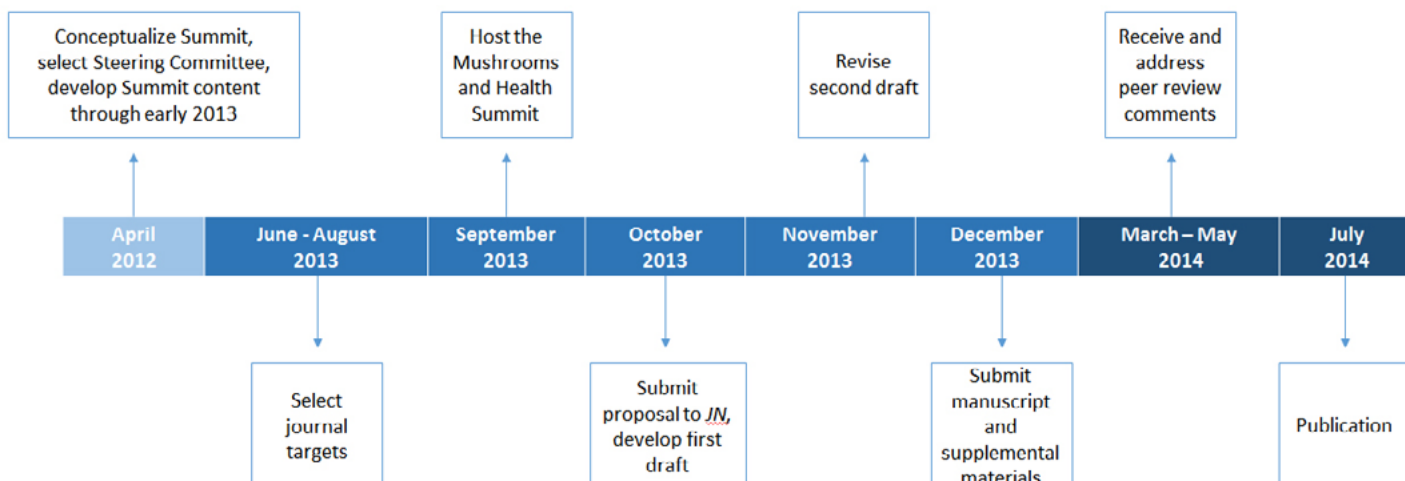
The first outcome was to leverage the proceedings as support in the Mushroom Council's comments submitted to the 2015 Dietary Guidelines Advisory

Proceedings from the summit, published in the *Journal of Nutrition*, is a testament to the validity and credibility of the deep collection of existing mushroom research.

Committee, the task force who oversees the development of the U.S. Dietary Guidelines which sets the standards for American nutrition. For this and future applications, the vision for the proceedings was born long before the work began - beginning with the development of the summit concept (April 2012) and selection of a Steering Committee that helped develop the summit agenda, topics, speakers as well as providing guidance on the development of the proceedings.

Mushroom and Health Summit Proceedings Timeline

This graphic chronicles the steps from the summit concept to the publications of the proceedings.



Mushrooms Get Social

AUSTRALIA

[Power of Mushrooms Website](#)
[My Mushrooms Blog](#)
[Mighty Mushroom Twitter](#)
[Mushroom Lovers Club Facebook](#)
[Power of Mushrooms YouTube](#)

CANADA

[Mushrooms Canada Website](#)
[Mushrooms Canada Blog](#)
[Mushrooms Canada Twitter](#)
[Mushrooms Canada Facebook](#)
[Mushrooms Canada Pinterest](#)
[Mushrooms Canada YouTube](#)

ITALY

[Italian Association Fungicoltori \(AIF\) Website](#)
[Italian Association Fungicoltori \(AIF\) info@fun.go.it email](#)
[Funghincucina Twitter](#)
[Funghincucina Facebook](#)
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NETHERLANDS

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[Champignonidee Google+](#)

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[Fresh Mushrooms Twitter](#)
[MushroomsSA Facebook](#)

SPAIN

[CTICH Website](#)
[Championidea Website](#)
[Asochamprioja Twitter](#)
[Asoc Prof Cultivadores Champiñon de La Rioja, Navarra y Aragon Facebook](#)
[Asochamprioja YouTube](#)
[ASOC.PROF.CULT Champiñón DE LA RIOJA Google+](#)

UNITED KINGDOM & IRELAND

[Just Add Mushrooms Website](#)
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[Just Add Mushrooms Facebook](#)
[Just Add Mushrooms YouTube](#)

UNITED STATES

[Mushroom Info Website](#)
[The Mushroom Channel blog](#)
[Mushroom Channel Twitter](#)
[Mushroom Channel Facebook](#)
[Fresh Mushrooms Pinterest](#)

Resources

Be sure to visit the Mushrooms and Health website www.mushroomsandhealth.com. Send what's happening in your country to communicate the benefits of mushrooms to consumers, shoppers, households, doctors, health professionals and the media to info@mushroomsandhealth.com.

Note: The *Bulletin* provides links to other sites for your convenience and information. These sites contain information created, published, maintained or otherwise posted by organizations independent of the Initiative which does not endorse, approve, certify or control these sites and does not guarantee the accuracy of the information contained on them.

Initiative Project Team

- Greg Seymour, President, ISMS; General Manager AMGA, Australia; Project Manager, Mushrooms and Health Global Initiative
- Bart Minor, President, Mushroom Council, United States
- Mary Jo Feeney, Mushrooms and Health Global Initiative Operations Manager, *Bulletin* Editor, United States
- Glenn Cardwell, Accredited Practising Dietitian, Nutrition Impact P/L, Australia
- Chris Rowley, Communications Consultant, Australia
- Juan Valverde, Food Science Programme Manager, Monaghan Mushrooms Group, Ireland
- Heidi Gengler, Vice President, Edelman Public Relations, United States

Strategic Communications Group

Members of the Strategic Communications Group strengthen the Initiative's communication capability and develop a local public relations presence in each country/market that is participating in the project. Members of this group help facilitate stories about mushrooms and health appearing in their local media, monitor mushroom nutrition and health research, liaison with scientists, media and other influencers, and provide feedback to the Initiative.

They include:

- Ignace Deroo – Belgium
- Elizabeth O'Neil Meurehg – Canada
- Kent Stenvang – Denmark
- Franz Schmaus – Germany
- Annemieke Bouwmeester – Netherlands
- Aleksandr Khrenov - Russia
- Jose Antonio Jimenez Hernandez – Spain
- Stephen Allen – United Kingdom