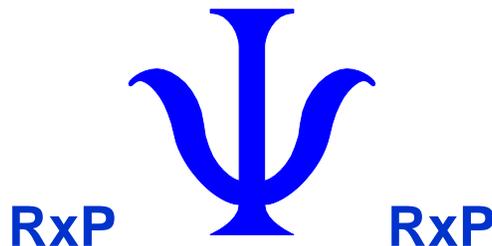


PSYNAPSE



Newsletter of the CPA Section on Psychopharmacology Volume 9, Number 1, 2006

Prescription Privilege Update

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The *Netherlands Institute for Psychology*
has endorsed prescriptive authority
(RxP). Holland has the highest
concentration of psychologists per

capital in the world outside of the United
States, and is using the *Academy of
Medical Psychology's* tenets for medical
and psychopharmacology training for
psychologists as a guide (visit the
Academy's website, which can be
accessed via clicking on CPA's
Psychopharmacology Section website
address located within the last segment
of this newsletter for information about
the process of becoming designated as a
Medical Psychologist).

Under the auspices of OPA President Dr.
Jack Ferrari, the Ontario Psychological
Association (OPA) has established a
Prescription Privilege (RxP) Task Force.

Prescription Privilege and Convention Update

David Nussbaum, Ph. D., Chair

CPA Section on Psychopharmacology

I have just returned from an enlightening weekend in Washington where I participated in an Association of State and Provincial Psychology Boards (ASPPB)/National Register (NR) meeting. We dealt, in part, with further refining designation and accreditation criteria for programs offering Prescriptive Authority (RxP) training. I was more encouraged by the tone and content of this meeting than by anything that I have witnessed or read in the last few years. I have previously attended advocacy meetings of Division 55 and having seen both sides (i.e., training/advocacy and designation/accreditation) of the “Psychology Table” I more fully appreciate that there are good people on both sides who want to make this project a “Go.” Issues of contention include who sets program content, oversees accreditation, promotes necessary legislation, and validates competency at the individual practitioner level. There are stages.

Internequine differences, in my opinion, have impeded the rate at which the RxP process has unfolded. I am reminded of the apocryphal story about the elderly rabbi who was asked by two followers to settle a dispute. They entered his living room, sat down and the first explained his position. The rabbi commented, “You’re right.” The second follower objected, and said, “How can you say he’s right, you haven’t yet heard my side.” After relating his side of the dispute, the rabbi told the second disputant, “You know what, you are

right.” The rabbi’s wife, listening from the kitchen, entered the living room and exclaimed, “But they can’t both be right,” to which the rabbi replied, “You know what, you’re right too.”

Absent a powerful but benign mediator, all sides in a dispute tend to become entrenched in their beliefs, and as social psychologists have long noted, the fundamental attribution error, through which we ascribe noble motivation to our own actions, but pernicious agendas to the behaviours of others, becomes the salient dynamic. Both sides project their needs for control on the other side, and not wishing to negotiate with an adversary, continue to waste resources, including time.

From my perspective, all sides in the process need each other for the initiative to proceed optimally. The roles of all organizations in the process are well defined in principle. Leafing through one of the display publications in the NR reception area, I read a sentence in an article that drove that point home. To paraphrase, it said that absent professional regulatory bodies operating at arm’s length of professionals and their guild organizations, regulation in the public interest would fall to the government. Government regulation is a prospect that is I find more worrisome than regulation administered by knowledgeable and experienced professional colleagues. Training organizations have the responsibility of developing appropriate curricula and delivering them to prospective graduates. Professional organizations such as APA have an obligation to promote the best

interests of the professional group within ethical guidelines. So where do the quibbles arise?

From what I can tell, the training providers in this case feel that they have developed the training programs and it is they who, by dint of their pioneering research in program development, possess the requisite expertise to judge what must constitute a designated and accredited program. You know what, they are right! The designation and accreditation organizations contend that no professional group monitors and regulates its own activities and would lose credibility if it tried. You know what, they are right, too! The advocacy organization oversees professional development and promotes the profession and the discipline's best interests. It organizes, approves and runs a broad set of continuing education programs and consequently sees itself as the natural source for supplying education for established practitioners seeking to expand proficiency in a new area. They are right also. But the overarching issue is not being right in an insular fashion, but contributing optimally to the overall RxP goal.

One of my American colleagues supported my perception. Historically he contends, the initiative evolved in an unstructured fashion, and according to some people, roles in this process were not well defined or understood by all parties. The dispute was intensified by the programme-training directors' belief that the process had been taken out of their hands and arbitrarily given to regulators who were unresponsive to

their concerns. One particular issue that irritated many RxP advocates was the proposal not to accredit non-university/non-degree-granting programs, despite their training the majority of RxP graduates to this point. This may be a mute point, as it is becoming clearer that the RxP programs of the future will predominantly be university based, not only because of the wishes of regulators or program directors but consumers.

Consequently, each side must recognize the primacy of its principle role and complement the process by providing that special piece of the puzzle to the fledgling RxP initiative. The regulatory bodies should consult with the training providers to establish rigorous and realistic criteria for designation, accreditation and individual credentialing. Training directors may not have been fully consulted and consequently felt alienated and estranged from the overall process. Realistically, it is the training programs that have invested the most time and have developed the most expertise over the last two decades. The training programs are intrinsically motivated to maintain high standards for the long-term viability of the initiative and its continuation. But once established, at least subject to a review every decade or so, it is the regulatory bodies who must implement these standards in an arms-length fashion to insure that the government and the public will have warranted confidence in turning to RxP trained psychologists. The greatest service that the advocacy organizations can contribute is to promote the legitimacy of the cadres of

trained psychologists to provide these services. This is entirely out of the purview of training programs and the regulatory bodies. Thus if each sector appreciates the legitimacy of the other organizations' functions and the limitations of its own, the process can unfold as it should, in a timely fashion, and confront the external challenges in a forthright, coherent and unified manner.

Where does this the Canadian RxP initiative? The biggest challenge we face is also from within, but it is not the inertia of CPA, but the inertia of the very psychologists who profess interest but do not act. A few years ago, I had a conversation with a CPA official who said that the only message filtering down to CPA was the anti-RxP position. The Board therefore had no incentive to promote the RxP agenda, especially since organized psychiatry had informed CPA that they would fight RxP tooth and nail and drag it out indefinitely if it became a possibility in Canada. My personal opinion is that you cannot allow yourself to be bullied if you believe in what you are doing. No organization can prevent Canadian psychologists from receiving the requisite training. To further that end, I am going to contact all of the current training providers and ask them to provide us with a description of their programs along with the minimum enrolment number needed to run a regional course in Canada. Additionally, I will ask for a bottom-line costing for Level 2 (didactic only, for folks who want to be able to work collaboratively with prescribers) and Level 3 (practicum work preparing the RxP psychologists with credentials to qualify for

independent prescription privileges) training.

Virtually all programmes are now university-based and provide master's levels degrees to doctoral level psychologists (although there are exceptions –for example, the Prescribing Psychologists' Register provides a university-based programme in association with a post-doctoral Diplomate credential). Once this information is at hand, it will be posted on our Section Website and members can email me and rank order the programs they would be willing to attend, what levels of training they wish, how much they are willing to pay, how far they are willing to travel, and their willingness to attend programs in American border cities. Assuming that there are sufficient numbers committing to run a cohort in any Canadian locales, we will invite that program to initiate the training in the area that supplies sufficient interest to run the program. Of course, others, from a neighbouring province that might not have sufficient indigenous candidates, may decide to travel to the closest city where a cohort is being run. In this way, we can facilitate RxP training to interested Canadian psychologists and not concern ourselves with the internal and external political issues that will arise once this initiative has been commenced. However, "our" actions will decide how soon this initiative flourishes on Canadian soil or is relegated to the Great White North's historical scrap heap.

CPA Convention Update: In closing, I look forward to seeing you all at our Section Business Meeting and Section Sponsored Symposium in Calgary. At the Symposium, we will honour two Canadian practitioners who have made outstanding contributions to psychopharmacology at the basic research and applied levels, respectively. The Calgary convention marks our Section's inaugural granting of achievement awards, and we hope that the Section membership will be well represented. Professor Muriel Vogel-Sprott, Professor Emeritus, University of Waterloo, has crafted a stellar career probing the depths of alcohol's effect on cognition, decision-making and behaviour. She is coming to Calgary all the way from her current research lab in Mexico. She will give us a talk describing her work that should be of interest to all psychologists working with clinical neuropsychological, substance abuse and forensic issues. The applied award will go to a psychiatrist, Dr. John Bradford, Head of the Forensic Program at the Royal Ottawa Hospital and University of Ottawa, for his groundbreaking work in effectively treating high-risk sex offenders in hospital and community settings. This will be of relevance to psychologists who want to learn about innovative clinical work in psychopharmacology. The conjoint granting of these awards also stresses the interdependence of basic and applied research to advance psychopharmacology "for all." Best regards, and a safe trip to all.

Anti-Inflammatory Pain Relief:

Prescribe *Oleocanthal* (in Freshly Pressed, Extra-Virgin Olive Oil)

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Oleocanthal is an enzyme that acts much like nonsteroidal anti-inflammatory drugs (NSAIDs) such as aspirin or ibuprofen. In a study published in the September 01, 2005 (Vol. 437, pp 45-46), issue of *Nature*, researchers isolated this enzyme in fresh extra-virgin olive oil.

The results showed that a 50-gram (or 1.75 ounce) daily dose of olive oil was equivalent to about ten percent of the ibuprofen dose recommended for adult pain relief.

Oleocanthal was found to inhibit the inflammatory activity of both Cox-1 and Cox-2 in the same way that anti-inflammatory drugs do. Inhibiting Cox-1 and Cox-2 reactions impedes the production of chemical messengers that cause the pain and swelling of arthritis inflammation.

This finding was significant in light of the increasing empirical evidence that inflammation might play a role in a wide range of diseases (i.e., cardiovascular disease, cancer, etc.).

Mushrooms Found to Possess Highest Levels of the Antioxidant, Ergothioneine

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Antioxidants are chemicals found naturally in comestibles and various beverages that are alleged to protect the body from harsh environments and disease.

In a study presented at the *American Chemical Society's 230th National Meeting* in Washington, August 28-September 01, 2005, researchers gauged the quantity of the antioxidant, *ergothioneine*, in different kinds of mushrooms.

Portabello mushrooms were found to possess the highest levels. *Shiitake*, *Oyster*, *King Oyster*, and *Maitake* mushrooms were also found to have relatively high levels. The most commonly eaten mushroom in North America, the *White Button*, was found to possess twelve times more *ergothioneine* than wheat germ and four times more than chicken liver, the two food sources previously decreed as the best known sources of this antioxidant. Cooking was not found to impair *ergothioneine* levels.

Inhibit Cartilage Degradation in Osteoarthritis and Maintain Joint Integrity and Function: Prescribe Pomegranate Extract

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There is already antecedent empirical evidence that *pomegranate juice* may prevent or reverse the progression of atherosclerosis and may also prevent the return of prostate cancer post-treatment (see articles in the previous issue of

Psynapse, Vol. 8, No. 2, 2005, pp 6-7 and 15-16).

Now, in a study published in the September 2005 (Vol. 135, pp 2096-2102) issue of *The Journal of Nutrition*, researchers found that *pomegranate extract* both cut levels of the inflammatory chemical, *interleukin-1b (IL-1b)*, and curbed enzymes that erode cartilage (cartilage is a hard but slippery coating on the end of each bone that helps bones slide smoothly past each other -- osteoarthritis develops when cartilage is broken down; exposed bone breaks down, causing pain, inflammation, and disability).

The researchers interpreted the findings as indicating that pomegranate fruit extract or compounds derived from it may inhibit cartilage degradation in osteoarthritis and may also maintain joint integrity and function. They further conveyed that the antioxidants in pomegranates fight inflammation and may also counter cancer and heart disease.

Prevent Osteoporosis and Consequent Fractures in Postmenopausal Women: Prescribe Soy Isoflavones, 60+ MG OD (in 13 Grams of Soy Protein)

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In studies published in the September 12, 2005 (Vol. 165, pp 1890-1895) issue of the *Archives of Internal Medicine* and the August 2004 (Vol. 43, pp 246-257) issue of the *European Journal of Nutrition*, researchers demonstrated that the consumption of *soy isoflavones* can protect against bone loss (but not strengthen already weak bones) and reduce the incident of fractures by 50% in postmenopausal women.

A study of 24, 403 postmenopausal Chinese women found that, within ten years of menopause, the twenty percent who consumed the most soy foods reported half as many fractures as the twenty percent who consumed the least soy. Soy protected against fractures at every level of consumption over five grams per day, with those consuming more than thirteen grams per day (or more than 60 milligrams of *soy isoflavones* per day --Note: one cup of soy milk contains about 6.6 grams, and one-half piece of tofu contains about 8 grams, of soy protein) obtaining the most benefit. However, it was underscored that soy only protected against bone loss but did not strengthen weak bones. It was further highlighted that soy was not as protective if the inauguration of soy consumption occurred more than ten years after the onset of menopause.

In another study, researchers administered two glasses of soy milk per day to postmenopausal women. Half of the subjects were administered soy milk with the *soy isoflavones* removed from it.

The subjects that were not administered the *isoflavones* were found to evince significant bone loss (i.e., 4.5%), while those consuming the *soy isoflavones* were found to maintain stable bone mass (i.e., no bone loss) over a four-year period. The researchers opined that *soy protein* might also play a role in bone protection, since the amount of bone loss experienced by the subjects who were deprived of the *soy isoflavones* was not as great as what would have typically occurred in postmenopausal women not taking some kind of bone-enhancing treatment.

The take-home point from these studies was that, while *soy isoflavones* are effective in *preventing* osteoporosis, they are not an effective *treatment* for osteoporosis.

Epigallocatechin-3-Gallate (EGCG), 1,500-1,600 MG OD, Found to Reduce Formation of Beta-Amyloid Protein in Alzheimer's Disease

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Epigallocatechin-3-Gallate (EGCG) is one of a group of antioxidants called *flavonoids*.

An abnormal buildup of beta-amyloid plaque in the brain is implicated in the nerve damage and memory loss seen in Alzheimer's disease.

In a study published in the September 21, 2005 (Vol. 25), issue of the *Journal of Neuroscience*, researchers administered high daily doses of *EGCG* over a period of several months to mice that had been genetically altered to develop Alzheimer's disease.

Findings: The nerve cells of treated mice were found to generate as much as fifty-four percent less beta-amyloid protein than non-treated mice nerve cells.

The researchers opined that, if the mouse model is representative of Alzheimer's disease pathology in humans, than *EGCG* dietary supplementation might be effective in preventing and treating this neuropsychological disease. A human dose of about 1,500 to 1,600 milligrams per day would be needed to replicate the dose that was found to be effective in the mice.

At the same time, they cautioned about the utility of merely consuming substances that contain *EGCG*. For example, although green tea contains

EGCG, it also contains other antioxidants that were found by the researchers to actually decrease *EGCG*'s ability to reduce beta-amyloid protein production. Hence, drinking green tea alone may be insufficient, and green tea extract selectively concentrating *EGCG* would be needed to override the counteractive effect of other flavonoids found in green tea.

Treatment of Migraine: Prescribe Carbon Dioxide

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Migraine is a debilitating neuropsychological disorder that can engender significant impairment in the daily functioning of sufferers.

A study reported at the *130th Annual Meeting of the American Neurological Association* in San Diego, California, September 25-28, 2005, involved a sample of seventy-seven migraine sufferers; thirty percent of the subjects

who sniffed carbon dioxide (CO₂) were found to be pain-free two hours later, compared to only nine percent of those administered a placebo. The degree of relief was similar to that achieved with the potent oral migraine drugs typically prescribed to migraine patients and, unlike some migraine drugs that can cause side effects such as dizziness and low blood pressure, CO₂ treatment appeared to be extremely safe, with the main side effects comprising nasal irritation (in 31% of the subjects) and watery eyes (in 8% of the subjects).

The researcher advised that the treatment should be administered as soon as the patient feels a migraine coming on, and the patient should then hold his/her breath for approximately one minute. If one administration does not work, the treatment process can be repeated five or ten minutes later.

The investigator opined that CO₂ increases acid levels, and hence lowers the activity, of the trigeminal nerve fibers in the nose that transmit migraine pain from the head to the brain.

SSRIs Found to Impair Episodic Memory Function

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Selective serotonin re-uptake inhibitors (SSRIs) include drugs such as Paxil (paroxetine), Prozac (fluoxetine), Zoloft (sertraline), Celexa (citalopram), Lexapro (escitalopram oxalate), and Luvox (fluvoxamine). Although these drugs have not demonstrated increased efficacy over either other drugs or drug-free therapies such as cognitive-behavioural therapy (CBT), they are the most commonly prescribed antidepressant drugs because they are alleged to possess a superior safety profile and less troublesome side effects.

However, a study published in the October 04, 2005, online edition of *Human Psychopharmacology: Human and Experimental*, the association between SSRI use and cognitive performance, mood, and human error at work was examined.

SSRI users and controls completed a battery of laboratory based computer tasks measuring mood and cognitive function pre- and post-work at the start and end of a working week. They also completed daily diaries reporting their work performance.

SSRI use was associated with memory impairment – specifically, poorer episodic, though not working or semantic, memory. Effects of SSRI use on recognition memory varied according to the underlying psychopathology,

while effects on delayed recall were most pronounced among those whose symptoms had not (yet) resolved. There were no detrimental effects on psychomotor speed, attention, mood or perceived human error at work.

Reduce Risk of Atherosclerosis and Cardiac Disease: Prescribe Phenolics (in Virgin Olive Oil)

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Virgin olive oil has previously been found to contain an enzyme (i.e., *oleocanthal*) with anti-inflammatory, pain-relieving properties (see article re this topic in this *Psynapse* issue). Now, another ingredient in this fatty substance (*phenolic compounds*) has been found to be largely responsible for the heart-healthy benefits of what has come to be known as the Mediterranean Diet.

Phenolics are believed to have antioxidant, anti-inflammatory, and anticlotting properties and are found in

higher concentrations in less processed oils.

In a study published in the Nov. 15 (Vol. 46, pp 1864-1868), 2005, issue of the *Journal of the American College of Cardiology*, researchers compared the effects on blood vessel function of eating virgin olive oil high in *phenolics* and olive oil that had been stripped of most of its *phenolics*.

On different days, twenty-one otherwise healthy adults with high cholesterol were administered a breakfast of white bread and 40 milliliters (a little more than 2.5 tablespoons) of each of the olive oils. During the pursuant four hours, blood samples were collected and the subjects' blood flow was monitored.

The results showed that the functioning of the inner lining of the small blood vessels of the fingers of the subjects and the concentration of certain healthy components in the blood, such as nitric oxide, improved after administration of high-*phenolic* olive oil. The *phenolics* augmented blood vessel dilation, hence improving blood flow. However, no such changes were found after administration of the low-*phenolic* oil.

These findings suggested that consuming substances rich in *phenolic* compounds, such as olive oil, might have a significant effect in reducing the risk of atherosclerosis (hardening of the arteries) and heart disease.

Augment Attention and Short-Term Memory Functions: Prescribe Caffeine, 100 Mg

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The powerful and wide-ranging health benefits of *caffeine* have been demonstrated via a plethora of previous empirical studies (e.g., see previous issues of *Psynapse*, such as the articles in Vol. 6, No. 2, 2003, pp 9-10 & 29-30).

In a study presented in Chicago, Illinois, at the annual meeting of the *Radiological Society of North America (RSNA)* convened on November 27th - December 02nd of 2005, researchers directed approximately one dozen healthy adult subjects to avoid *caffeine* for twelve hours and nicotine for four hours prior to the study. The subjects were then administered 100 milligrams of *caffeine* followed by the administration of a placebo a day or two later. Magnetic Resonant Imaging (MRI) scans were conducted while the subjects were concomitantly administered verbal memory tests comprising recall of a

handful of letters shown to them twenty minutes earlier.

The MRI scans showed more activity in brain regions related to attention and short-term memory in the *caffeine-treatment* condition relative to the placebo-treatment condition, and the researchers noted that this was the first time that caffeine had been scientifically shown to have this effect.

**Lower Blood Cholesterol Levels:
Prescribe Phytosterols (in Sesame
Seeds and Wheat Germ)**

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Phytosterols are a group of chemicals found in plants that are similar in chemical structure to cholesterol, and have been shown to lower blood cholesterol levels and reduce the risk of some types of cancer.

In a study published in the November 30, 2005 (Vol. 53, pp 9435-9436), issue of

the *Journal of Agricultural and Food Chemistry*, researchers assessed and compared the *phytosterol* content of twenty-seven nut and seed varieties.

Sesame seeds and wheat germ were found to contain the highest overall *phytosterol* content, followed by pistachios and sunflower seeds, pumpkin seeds, pine nuts, almonds, macadamia nuts, black walnuts, pecans, cashews, peanuts, and hazelnuts. Brazil nuts and English walnuts ranked the lowest in *phytosterols*. Chocolate ranked between black walnuts and pecans in *phytosterol* content.

**Reduce Risk of Colon Cancer:
Prescribe Diet High In Chicken Meat**

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In a study published in the December 2005 (Vol. 100, pp 2789-2795) issue of the *American Journal of Gastroenterology*, data were collected on 1,520 human subjects who volunteered

to have repeated colonoscopies in two large clinical trials.

Subjects who consumed a lot of chicken meat were found to have an associated twenty-one percent lower risk of all adenomas (i.e., growths that can be precursors of colon cancer) than those who ate little chicken meat. The risk was thirty-nine percent lower for the greater threat of advanced adenomas. The authors noted that these findings confirmed the results of two previous studies that also found an association between a reduced risk of colon cancer and the consumption of chicken meat.

Moreover, contrary to popular opinion, the study also found an absence of any deleterious effect (in terms of colon cancer risk) associated with a diet high in fat or unprocessed red meat and no reduction in risk of colon cancer from eating fish.

Reduce Risk of Breast Cancer By 75%: Prescribe Caffeinated Coffee, 6+ Cups OD

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Copious studies have documented the health benefits of *caffeinated coffee* in dramatically lowering the risk of numerous serious physical and psychological disorders (e.g., see previous articles in *Psynapse*, Vol. 7, No. 1, 2004, pp 27-29; Vol. 8, No. 1, 2005, pp 16-17; and Vol. 8, No. 2, 2005, pp 23-24).

A study published in the January 2006 edition of the *International Journal of Cancer*, which involved 1,690 women in Canada, the United States, Israel and Poland found that women with the so-called BRCA1 mutation, who have about an 80 percent risk of developing breast cancer before their 70th birthday, benefited from heavy *caffeinated coffee* consumption.

Those subjects who drank six or more cups of *caffeinated coffee* a day on average had about a seventy-five percent reduction in the risk of breast cancer, while those who drank decaffeinated coffee derived no benefit.

Researcher's Explanation: Estrogen is metabolized by different pathways, with one pathway yielding to good estrogen and the other to bad estrogen. Women who have more good estrogen compared to bad have been shown to have a lower risk of cancer. *Caffeine* affects the

enzyme that increases the good estrogen production.

Recent Clinical Studies Raise Questions About Health Risks of Soy Protein / Isoflavone Consumption While Showing No Evidence of Any Health Benefits

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Eating soy products or taking soy-based isoflavones as a health benefit (e.g., cardiovascular health) has been propounded over the past six years. However, it was reported in the February 14, 2006, online edition of *Circulation* by the *American Heart Association (AHA) Nutrition Committee* that, after reviewing twenty-two studies of such, they concluded that eating large amounts of soy protein had no effect on cardiovascular risk factors such as

triglycerides or high-density lipoprotein cholesterol, and that isoflavone supplements had no effect on cholesterol at all. In addition, the recent placebo-controlled clinical studies did not back up claims that soy protein/isoflavones reduce hot flashes and other symptoms of menopause, strengthen bone, or protect against breast, endometrial (uterine) or prostate cancer.

In sum, the *AHA Nutrition Panel* found no convincing evidence that soy protein / isoflavone supplementation conveyed any health benefits at all, while additionally noting that the few studies that have been done re this issue raised questions about the safety of such supplementation. Consequently, they recommended against the use of such supplementation in either food or pills.

ADHD Drugs Found to Increase Risk of Heart Attacks, Strokes, and Sudden Death

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Stimulant drugs being marketed under brand names such as *Adderall*, *Concerta*, and *Ritalin* are often prescribed to patients diagnosed with the psychological disorder, *Attention-Deficit Hyperactivity Disorder (ADHD)*.

However, neither prescribing clinical psychologists nor *ADHD* patients are typically alerted to either the fact that these drugs increase heart rate and blood pressure or to the clinical uncertainty of the real-world consequences of the physical changes caused by these drugs.

A study published by the *FDA Drug Safety and Risk Management Advisory Committee* on February 09, 2006, which comprised 676,000 patients, found an elevated occurrence of heart attacks and strokes in adults taking *ADHD* drugs, including *Adderall*, *Ritalin*, and *Concerta*. Children on the drugs also showed a higher-than-expected number of strokes, along with an elevated rate of heart attacks – i.e., 49 cases of heart attacks in children and adolescents who had taken *ADHD* drugs were found, compared with 12 attacks expected in that age group, based on national health data. In adults, 732 heart attacks were observed where only 218 were expected, and 401 strokes occurred where 164 were expected.

About twenty reports of sudden deaths in adults and children taking Adderal, the

most popular *ADHD* drug, were also received by the *FDA*, which prompted the Canadian government to order *Adderal XR*, the drug's extended-release form, off the shelves in February of 2005, until it included new safety warnings during the summer of 2005.

The massive and rapidly increasing number of children, adolescents, and adults currently consuming these drugs prompted the *Advisory Panel* to recommend that strong warnings be placed on all of these drugs in order to get people to pay attention to the potentially fatal risks associated with their consumption.

Low-Sodium Diet Linked to Cardiovascular Disease

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In a study published in the February 22, 2006 (Vol. 119: online edition) issue of *The American Journal of Medicine*, researchers looked back and analyzed

data on the nutritional habits of 7,154 people interviewed between 1976 and 1980. About thirteen years after the nutritional information was collected, there were 1,343 deaths among the subjects, including 541 deaths from cardiovascular disease.

Subjects who reported restricting daily salt intake to less than 2,300 milligrams (i.e., about one teaspoon of table salt), per day (which is currently recommended in government nutrition guidelines) were significantly (i.e., 37%) more likely to have died from cardiovascular causes such as stroke, heart attack and coronary heart disease than people who consumed more salt than recommended by the extant guidelines, even after adjusting for total calorie intake, age, smoking status, and other known risk factors for heart disease.

While the link between low-sodium consumption and a higher risk for death was not seen among nonwhite or obese subjects or subjects who were younger than fifty-five when enrolled in the study, it was underscored that no single subgroup appeared to benefit from consuming a lower-sodium diet. At the same time, it was noted that a wide range of individual variation in the response to salt exists, and that there might be select people who are hyper-responsive to sodium.

It was additionally highlighted that this was the second study published within a two-week period that had uncovered a widely held dietary myth. The findings of the first study (the largest one ever to examine the consequences of dietary fat restriction) indicated that restricting

dietary fat may have little impact on heart disease and cancer risk.

Moderate Alcohol Consumption Found to Have NO Health Benefits

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For about three decades, a number of studies have alleged that moderate alcohol consumers (i.e., one to two drinks per day) live longer and experience reduced deaths from heart disease than either abstainers or heavy drinkers (i.e., more than two drinks per day). These allegations eventuated in clinicians recommending to their patients that they should have a drink every day. However, those studies included in their samples of “abstainers” people who stopping drinking because of ill health and because of the adverse effects of alcohol on the medications they were taking for their illnesses. In other words, the group of “abstainers” was actually comprised of individuals who were already ill and showing all signs of death.

In a study published in the May 2006 early online edition (posted March 30, 2006) of *Addiction Research and Theory*, researchers reviewed the old studies of alcohol use and death from heart disease.

Studies that separated out long-term abstainers from previous drinkers found no reduction in death risk for moderate drinkers, and when the researchers re-analyzed other studies via including only long-term nondrinkers in the abstainer group, the benefit of moderate drinking disappeared.

The researchers concluded that there was currently insufficient evidence to recommend to people that they should consume any quantity of alcohol for health reasons, while at the same time enormous evidence existed delineating multiple and inordinately serious risks of alcohol consumption (i.e., liver disease, neuropsychological disease, high blood pressure, high levels of blood fats, automobile accidents, psychosocial impairments, etc.).

Protect Against Heart Disease and Diabetes: Prescribe Soluble Plus Insoluble Fibre, 20-25 Grams OD

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While the intestinal benefits of fibre are well known, its capacity to prevent cardiovascular disease and diabetes is generally not.

In a study published in the April (Vol. 83, pp 760-766, & Vol. 29, pp 775-780) 2006 issue of the *American Journal of Clinical Nutrition*, researchers followed 524 healthy adult subjects for one year. At the beginning of the study, and every three months thereafter, they drew blood for lab tests and collected details about what the subjects were eating.

Most of the subjects averaged 16 grams of fiber a day. The 20% of study subjects who were consuming the least fiber got a little more than 10 grams a day, and the 20% who were consuming the most got more than 22 grams a day.

Compared with those who ate the least fiber, those who ate the most were found to be 63% less likely to have high levels of *C-reactive protein (CRP)* (consistently high *CRP* levels have been shown to predict an increased risk of heart disease and stroke, and to additionally signify that an individual is at risk of diabetes).

In a study published in the April 2006 issue of *Diabetes Care*, researchers studied 17 overweight or obese adult female subjects. For three days, three times a day, the subjects consumed some white bread. Half the subjects were administered plain white bread, and the

other half were administered bread spiked with 10.4 grams of oat fiber.

The researchers found that the subjects who consumed the insoluble oat fiber over the short three-day time period became significantly more sensitive to insulin (over time, the bodies of overweight people become less and less sensitive to insulin, the hormone that controls blood sugar levels, and this lack of sensitivity results in diabetes in some people). The researchers hypothesized that increased insoluble fiber leads to more fermentation at the lower end of the bowels, which might set off a chain reaction that changes the way the body responds to insulin.

Foods containing substantial soluble fibre include the following: *Oatmeal; Nuts & Seeds; Legumes (peas, beans, lentils); Apples; Pears; Strawberries; Blueberries.*

Foods containing substantial insoluble fibre include the following: *Whole-Grain Bread; Whole-Grain Breakfast Cereals; Wheat Bran; Seeds; Certain Vegetables (carrots, cucumbers, zucchini, celery, tomatoes).*

Treatment of Obesity: Prescribe Oxyntomodulin

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Oxyntomodulin is one of several hormones made by the body that are thought to regulate satiety, and is found in the digestive tract.

A study published in the April 18, 2006, online edition of the *International Journal of Obesity* comprised fifteen healthy, overweight (i.e., BMI = 25-29) and obese (i.e., BMI = 30 or higher) adult male and female subjects between 23 and 49 years of age (Average Age = 37) and with BMIs (Body Mass Indices) ranging from 25 to 39. None of the subjects were dieting, taking weight loss drugs, or smoking tobacco, and their body weight had been stable for at least three months prior to the study. The subjects also completed a questionnaire prior to the study in order to screen out anyone with abnormal eating patterns. In addition, female subjects of childbearing age were advised to use contraceptives and submit regular urine samples for pregnancy tests. For four days, each subject was required to inject his or her abdomen with *oxyntomodulin* or salt water (placebo) before meals, and to repeat the four-day cycle three times. In the first cycle, all of the subjects received salt water as they learned how to give themselves the shots. Subsequently, they spent one cycle on the hormone and the other on the placebo, though they didn't know which was which.

Subjects were instructed to fast the night before and to avoid alcohol and strenuous exercise for 24 hours before coming to the lab. At the lab, subjects gave themselves their first injection. Half an hour later, they were fed a meal of chicken curry, mushroom stroganoff, or chicken tagliatelle (a type of pasta). All subjects rated the food as appealing. They also had similar hunger ratings before eating. Subjects commenced each cycle at the researchers' lab, and then provided their own meals for the rest of each cycle, giving themselves injections of *oxyntomodulin* half an hour before each meal. They wore devices that tracked how many calories they burned.

Subjects who had just gotten the hormone shot were found to have consumed about 128 fewer calories at the meal. They were also found to burn about 143 more calories per day while using the *oxyntomodulin* shots, compared with the placebo injections, although the hormone shots did not appear to have any effect on calories burned at rest.

Subjects lost approximately one pound when they used the hormone shots for four days, although it was not clear if they lost body mass or fluids. After four weeks, subjects receiving the *oxyntomodulin* shots lost about five pounds, compared with about one pound lost by the placebo group.

IMPORTANT REMINDERS!!

Please convey to the Section any revisions to your e-mail address(es) on a timely basis so that the Section can forward new developments and/or

information to you on an ongoing and expeditious basis.

Additionally, please feel free to contribute articles to the newsletter that you surmise might be of interest to the Section's membership.

Information can also be submitted to the Section's website, *Pharmacology and Psychology*, at:

<http://www.cpa.ca/PharmPsych/>,

which contains a breadth of information on RxP in addition to some previously published issues of *Psynapse*, via contacting the Manager of Communications and Membership Services at:

publications@cpa.ca