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VOLUME 2, ISSUE 11

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A STUDENT-OPERATED NEWSLETTER BY THE ST. JOHN'S UNIVERSITY COLLEGE OF PHARMACY AND HEALTH SCIENCES' RHO CHI BETA DELTA CHAPTER

Inside This Issue

iPod®, iPad®, iPhone®... iLimb™

By: Sang Hyo Kim, Staff Editor

There is a new invention called "i-limb ultra revolution," which allows amputees to control their prosthetic hands with an Apple® app called "Bioism." Designed by Touch Bionics in the United Kingdom, the new prosthetic hand has five individually powered fingers, including a rotating thumb and an auto-grasp feature that prevents slippage. There are 24 different grips an amputee can choose from on their app control that allows greater functionality.[1]

Aimee Copeland, a 22-year-old amputee who spent a week in the United Kingdom for the fitting of her "bionic hands," returned home to Atlanta, where she looks forward to cooking her own food. Copeland explained, "[The prosthetic hands] just mimics so well a natural hand that it really just reminds me of before the accident how I would have done things." With 24 different types of grip patterns to choose from, Copeland will be able to use her new hands as she once did for everyday tasks such as chopping vegetables, picking up small pieces of candy, and even straightening her hair.[2]

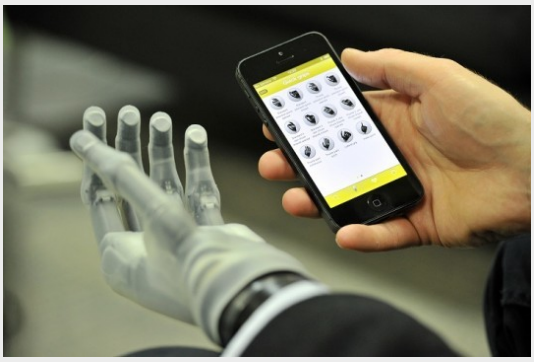

Photo: New "smart" prosthetic can be controlled with the push of a button.

Figure Source: Lidija Grozdanic. "i-Limb:Touch Bionics' Amazing Prosthetic Hand Can Be Controlled Via Smart Phone.inhabitat." 4/23/13. http://inhabitat.com/touch-bionics-amazing-prosthetic-hand-can-be-controlled-via-smart-phone/. Accessed June 14, 2013

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NEWS

amputees like Copeland get back on track. Jason Koger, another double amputee and the first in the world to receive a pair of bionic hands, explained how he felt being able to hold his daughter's hands for the first time in five years. "I can't tell you what a gift that feels like," Koger says. Although he emphasizes that it may take longer for him to perform daily tasks, he feels that he is more active with these new hands.[1]

The i-limb™ ultra is the most recent and versatile prosthetic hand. i-limb™'s upgrade on pulsing and vari-grip allows amputees to increase the strength of their grip on an object, which is extremely helpful when tying a shoelace or holding a bag.[3] Despite its advantages, the Bioism app can only control upper limbs of the body. Amputees who will receive prosthetic legs still have to wait for companies like Touch Bionics to develop advanced features so that the legs can be programmed similarly to the hands.

Although Copeland received the prosthetic hands for free as an ambassador for Touch Bionics, a spokesman for Touch Bionics confirmed that each i-limb™ ultra revolution can cost up to $120,000.[2] The cost can be expected to gradually decrease within years, since i-limb™'s release is still very recent. Despite the hefty price tag, the new invention gives hope to amputees around the world that the latest technology can have a life impacting change.

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Organ Creation Attempts to Answer Shortage Crisis

By: Efime Popovitz, BS/MD Candidate, Sophie Davis School of Biomedical Education

When Sarah Murnaghan received the long awaited adult lung after years of battling cystic fibrosis, she not only narrowly escaped her death sentence, but also brought to light a plight that thousands of individuals face each day- a struggle for the opportunity to receive an organ and the gift of life.[1] Although the Murnaghans' battle was successful, many are less fortunate and fall victim to the reality of the scarcity of donors. Recent bioengineering advances have attempted to address the issue with an unconventional but promising solution: the man-made organ. The notion of creating organs that can be successfully transplanted in humans may seem farfetched. However, scientists have recently proven that such a cutting-edge solution is sensible.

In 2011, history was made when an artificial trachea was implanted in Andemariam Beyene, a patient in Sweden with tracheal cancer. Beyene's implant surgery was the first ever transplantation of a generated organ in its entirety.[2] The creation of organs lies heavily in the concept of developing a skeleton or scaffold on which human cells can form. In

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Beyene's case, a plastic porous scaffold was bathed in his stem cells, so that the cells would develop on all surfaces of the tracheal scaffold and eventually result in a trachea compatible with the body. Despite the apparent success and prospect surrounding Beyene's transplantation, there is the challenge of integrating a man-made organ into the recipient's body. The integration of the body's blood vessel network with that of the developing specialized cells on the artificial scaffold is vital to the acceptance and function of the implanted organ. There is also the concern of scarring. However, lab generated organs preclude the possibility of a recipient's body rejecting a transplanted organ, since the parts are created using the recipient's own stem cells.[3]

Although the creation and successful transplantation of organs such as the trachea signify a step forward, there is far less progress in doing the same with more complex and demanded parts, like the heart and kidney. Ears, noses, and airways, given the nature of their structures, require less intricate scaffolds.[1] The structural and functional complexity of a heart, however, makes it far more difficult. A lab grown heart would demand scientists to establish an environment that can pump sufficient amounts of blood through the heart and generate an appropriate electrical signal for a pulse.[4] Even so, scientists are optimistic that transplantation of a heart or kidney is a reality that can be attained within the next decade.

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Quote of the Month

By: Melissa Roy, Co-Copy Editor [Graphics-Focused]

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EVENTS

DIA 2013 Annual Meeting: Boston, Massachusetts

By: Kristin M. Cheng, PharmD Candidate c/o 2014

The Drug Information Association (DIA) 2013 Annual Meeting took place from June 23rd to June 27th at the Boston Convention and Exhibition Center in Boston, Massachusetts. Twenty-one students from the St. John's University DIA student chapter attended this year. The purpose of the meeting was to advance therapeutic innovation and regulatory science. For students, it was a great opportunity to become immersed in current pharmaceutical issues such as FDASIA and on-the-rise topics like "big data." The forums, workshops, and conferences were categorized into 23 "tracks" that included topics such as clinical operations, public policy, and rare orphan diseases. This organizational scheme helped to guide attendees in scheduling sessions of interest.

On our first night in Boston, our chapter and our student advisor, Michelle Pernice, PharmD, St. John's University alumna, gathered for a chapter meeting so that we could discuss how to navigate the structure of the conference. Returning attendees also used this opportunity to pass down their previous experiences from last year's meeting onto newcomers. Although a significant amount of members from the St. John's University DIA student chapter attended the meeting, it was unique in that each person's experience was still able to be highly individualized and tailored to his or her own personal interests. Also, regardless of the amount of knowledge of industry one possessed, there was an appropriate pace for everyone.

DIA is a special organization; Despite its focus on pharmaceuticals, its annual meeting featured specialists in a wide spectrum of disciplines. For example, in a session focusing on FDA collaborations and its effect on the reach of health care communication with the public, the speakers included a pharmacist from the FDA, a chief public health officer from the American Optometric Association, and an executive director from Medscape. The vast diversity of experts, thought leaders, and innovators present at the conference provided students with the chance to practice networking skills and to learn from different types of professionals, mirroring a post-graduate environment, in which interdisciplinary teams are common and beneficial to the advancement of medicine.

Another advantage of attending the meeting was being provided with the opportunity to meet students of other newly formed collegiate chapters. Currently. all student chapters of DIA are pioneers because the organization on a national level has just recently started to collaborate with students. By convening in one central location, we were able to meet other students and gain an insight into how other chapters are run. Furthermore, this meeting has fostered a foundation for future collaboration among chapters across the country.

In addition to learning from sessions and other student chapters, students had the unique opportunity to learn directly by participating in student poster presentation sessions. Prior to the meeting, students were given the chance to submit research and abstracts of their studies to share with industry professionals at the DIA Annual Meeting. This excellent experience allowed students to gain exposure within the research realm and to develop professionally. After seeing this year's poster presentations, attending students may be inspired to initiate their own research and present it the following year.

Speaking as a first time attendee, the initial experience may seem daunting. However, as evident from this past conference, it is extremely helpful to have a support system of fellow St. John's University students. I noticed that as individuals gained more confidence, their independence from others and the ability to comfortably network became more apparent. These are important qualities that cannot be taught in a classroom, but instead can only be acquired from first-hand experience. The conference also provided a multitude of sessions that supported

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the professional development of skills such as presenting and interviewing, which are important for success in any field. As for returning attendees, these students and professionals seemed to navigate more easily through different sessions where they honed their knowledge of specific current events including those in regulatory affairs, medical devices, and evolving policies. Because of their past experience at the DIA annual meeting, they were able to fine-tune their interests and attend more advanced sessions this year. Regardless, whether a seasoned conference veteran or rookie, the field of medicine is ever-changing and there will always be new knowledge to be learned by all each year.

Photo (from left to right): Michelle Pernice (PharmD), Daan Chen, Richard Cho, Pakchi Chen, Melissa Roy, Bethsy Jacob, Kristin Cheng, Michael Cronin, Anthony Yam, Tracey Li, Mitesh Patel, Taryn Mondiello, Praneeta Nagraj, Lucy Park, Christina Kim, David Ong

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New Findings Regarding Cardiovascular Adverse Events with ADHD Medications

By: Aleena Cherian, Co-Copy Editor [Graphics-Focused]

Attention deficit/hyperactivity disorder (ADHD) is a chronic neurological behavior characterized by persistent patterns of inattention and/or hyperactive behavior, resulting in a wide range of emotional, functional, and neurocognitive impairments.[1,2] First line therapy for ADHD consists of stimulant medications together with non-pharmacologic interventions, and has been shown to improve health related quality of life, brain dysfunction, and academic achievement.[3] In the US, over 2.8 million children and 1.5 million adults use stimulants and other medications annually for the treatment of ADHD.[3,4,5]

Stimulant medications for ADHD include methylphenidate and amphetamines, which facilitate the release of norepinephrine and dopamine in the prefrontal cortex.[3] The most frequently reported adverse events with these agents are decreased appetite, stomach ache, nausea, headache, insomnia and nervousness, and less commonly, emotional lability, irritability, and cardiovascular effects.[3] The sympathomimetic effects of stimulants have been reported to cause an increase in systolic blood pressure by 1-4 mm Hg and an increase in heart rate by 3-8 bpm at therapeutic doses, which while insignificant, has potential long-term complications.[1,6] An FDA Summary also reported cardiac arrest, MI, and sudden unexplained death among the top 50 adverse events after use of amphetemines and methylphenidate.[7]

The researchers confirmed the findings of most of the earlier studies, that the use of ADHD medications did not increase a patient's risk of sudden death and did not cause adverse cardiovascular outcomes.

Various retrospective cohort studies have been conducted to better evaluate the potential cardiovascular consequences of stimulant agents in children and adults, with most studies finding no increased risk of serious cardiovascular events with the use of these medications. [6,8,9] However, one matched case-control study of sudden deaths in youths ages 7-19 did find a significant association with stimulant use and sudden unexplained death.[10]

In May 2013, the results of a meta-analysis of studies that examined the cardiovascular effects of ADHD were published online. Reviewers included studies with at least 100 ADHD patients with follow up longer than 1 year. Three studies were included in the analysis with a total of over 2 million patients, the largest patient population to date, assessing the primary endpoint as rates of sudden cardiac death and the secondary endpoint as rates of MI or stroke. The researchers confirmed the findings of most of the earlier studies, that the use of ADHD medications did not increase a patient's risk of sudden death and did not cause adverse cardiovascular outcomes.[2] Even after excluding the results of the only study that included middle aged patients,[5] the findings still did not show an increased risk of sudden death or stroke.

While this analysis did not demonstrate an increased risk of adverse cardiac events, pharmacists still have a role to play in monitoring the use of ADHD medication, especially given the widespread use of stimulants. Practitioners should be advised against administering or prescribing these agents to patients with severe heart problems, arrhythmias, or uncontrolled blood pressure. Pharmacists can also advise and educate each patient to regularly monitor their blood pressure and heart rate while on stimulant medications to check for any changes that could warrant medical attention.

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Comparison of the New Oral Antithrombotics and Warfarin

By: Omar Khalid, Pharm D Candidate c/o 2014

The outpour of a multitude of new oral anticoagulants in recent years has health care professionals questioning whether they should switch patients over, and what new agents should be used. With the recent addition of dabigatran (Pradaxa®) in October 2010, rivaroxaban (Xarelto®) in November 2011, and apixaban (Eliquis®) in December 2012, there are now many alternatives to warfarin for stroke prevention in patients with atrial fibrillation. Direct factor Xa inhibitors edoxaban and betrixaban are also in the pipeline and may be approved in the next few years.[1]

Anticoagulants are categorized by their mechanism of action. Apixaban and rivaroxaban are direct factor Xa inhibitors, dabigatran is a direct thrombin inhibitor, and warfarin is a VKORC1 inhibitor. Warfarin inhibits the formation of vitamin-K dependent clotting factors II, VII, IX, and X. Both apixaban and dabigatran are only approved for thromboembolism prevention in non-valvular atrial fibrillation. They are dosed at twice a day. On the other hand, rivaroxaban is approved for more treatments including venous thromboembolism (VTE) prevention, deep vein thrombosis (DVT) and pulmonary embolism (PE) treatment and prevention. Rivaroxaban is used once daily. Until recently, warfarin was used for most of these conditions.[2]

Compared to warfarin which requires extensive INR monitoring, the new antithrombotics such as apixaban, dabigatran, and rivaroxaban have the major advantage of not requiring routine coagulation tests. In addition, apixaban seems to yield better patient outcomes in clinical trials: for every 1000 patients with atrial fibrillation treated annually, apixaban prevented three more strokes and prevented four deaths when compared to warfarin. Patients on apixaban also avoided ten major bleeds.[3] Dabigatran prevented five more strokes per year in every 1000 patients treated for atrial fibrillation, with comparable overall bleeding risk to warfarin.[4] Lastly, rivaroxaban was found to be comparable to warfarin in preventing strokes in atrial fibrillation.[5] However, it is important to keep in mind that the newer agents are harder to control, lack long-term research data, and needs more post-marketing surveillance.[4]

Regardless of these advantages, practitioners are tempted to switch their patients to the newer agents because of the inconvenient aspects of warfarin. Warfarin is highly protein bound (99%), works against vitamin K, and is heavily metabolized (92%). In addition, warfarin metabolism is carried out by cytochrome P450 2C9 and 3A4. Competition for protein binding and for 2C9 and 3A4 metabolism with other drugs, CYP450 2C9 polymorphism, and

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varying intake of vitamin K all leave the anticoagulant bare to numerous drug and food interactions. Genomic variations in 2C9 may reduce warfarin clearance, increasing the risk of bleeding. On the other hand, foods rich in vitamin K such as dark leafy vegetables may inhibit anticoagulant effects of warfarin, meaning that patients have to restrict their diet. Additionally, because the onset of warfarin is 48-72 hours and the full therapeutic effect may not be seen for 5-7 days, supplemental anticoagulation is needed for at least the first five days.[5]

Even though warfarin has many shortcomings, it still holds some advantage over the newer agents. The new agents do not have antidotes while warfarin has Vitamin K. In addition the newer agents are not approved for use in patients with prosthetic heart valves, most likely needs renal function monitoring, and cost over $230 every month (the cost for warfarin is $80 monthly including the cost for INR monitoring).[1]

Due to these disadvantages, switching patients already on warfarin to the newer agents is not recommended at this time, especially if the patients' INR is stable.

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DIA Tri-State Student Consortium-Your opportunity to get involved in **global health!**

The TSC is currently planning an event for early October, co-sponsored by DIA and the Rutgers University Centers for Global Advancement and International Affairs.

The event, *Countering Counterfeit Medications in Africa* is a panel symposium to be held near Rutgers campus but will have a wide invitee distribution list including all students from DIA student chapters in the tri-state area, all past and current Rutgers fellows, all faculty and students in the Centers for Global Advancement and International Affairs department at Rutgers.

This will be a great event with wonderful lessons and networking!

Contact Hannah Kim hannkim@eden.rutgers.edu and Michelle Pernice shelle055@gmail.com if you are interested in contributing to event planning-a wonderful opportunity to network closely with prominent global health professionals

Two New Agents for the Treatment of Obesity

By: Nathan Trustman, PharmD Candidate c/o 2014, AMSCOP at LIU

Obesity is defined as having a body mass index (BMI) of 30 kg/m^2 or greater. It is thought to be the result of an imbalance between energy intake and energy expenditure, possibly due to a number of genetic and environmental factors.[1] It is estimated that 140 million people in the United States are either obese or overweight (BMI ≥ 25 kg/m^2).[1] Americans spend about 60 billion dollars trying to lose weight each year.[2] The prevalence of many serious diseases including coronary artery disease, atrial fibrillation, congestive heart failure (CHF), type 2 diabetes mellitus, dyslipidemia, osteoarthritis, obstructive sleep apnea, gallstones, and many different cancers are all increased in obese patients.[1,3,4] A decrease of 5-10% in body weight can decrease a patient's risk of developing these comorbidities and in addition improve quality of life.[1] Non-pharmacologic therapy, including reduced caloric intake (total daily intake of about 800 to 1,200 kcal), increased physical activity (at least 30 minutes of moderate physical activity on most days), and behavioral modification (behavioral contracting or describing goals and benefits of therapy, and support from family and friends), are recommended as first line for every patient for the treatment of obesity for at least six months.[1] However, drug therapy is often necessary if adequate weight loss is not achieved.

The agents for the treatment of obesity can be organized into two categories: agents for short-term management (12 weeks) and those for long-term management.[2,3] Agents such as diethylpropion and phentermine (Adipex-P®) are used for short-term management in the US. Most patients will regain the lost weight after they discontinue the drug, which is a major flaw. On the other hand, there are the long-term agents. Until recently, the only agent indicated for long-term use was orlistat (prescription only Xenical® or over-the-counter Alli®).

While diethylpropion, phentermine, and orlistat have been effective over the years, a number of anti-obesity drugs have been withdrawn from the market due to dangerous side effects. In the US, these include fenfluramine (withdrawn in 1997 due to heart disease and pulmonary hypertension), dexfenfluramine (withdrawn in 1997 due to heart disease and pulmonary hypertension) and sibutramine (withdrawn in 2010 due to increased risk of heart attack and stroke in high-risk cardiac patients).[3]

In the past year, two new agents have been approved for chronic weight management: lorcaserin (Belviq®), approved on June 27 2012, and phentermine/ topiramate extended-release (Qsymia™), approved on July 17 2012.[5,6] (Table 1 shows the dosage form, strength, and usual doses of the two new agents. Table 2 compares the efficacy of the two.)

Lorcaserin selectively activates serotonin 2C (5-HT$_{2C}$) receptors on anorexigenic pro-opiomelanocortin neurons located in the hypothalamus. Activation of these receptors is thought to decrease food consumption and promote satiety.[5] Because it is a serotonergic agent, the drug has the ability to cause serotonin syndrome when used with other serotonergic agents, such as SSRIs, SNRIs, MOA-Is, triptans, dextromethorphan, and St. John's Wort. Reviewing the patient's medication profile, inquiring about OTC product use and counseling the patient about the signs and symptoms of serotonin syndrome (flushing, fever, racing heartbeat, and confusion) is essential in order to avoid this adverse effect.[5]

Lorcaserin, a schedule IV drug, is contraindicated in pregnancy (category X) so female patients of childbearing age must be counseled to use appropriate birth control. The weight loss agent comes in a 10 mg oral tablet and the recommended dose is 10 mg twice a day without regards to meals. Counseling should contain information on how to monitor the effectiveness of the drug. Patients who do not achieve at least a 5% weight loss in the first 12 weeks of therapy should discontinue the drug because it is likely ineffective in that particular patient.[5]

Efficacy and safety was shown in three double-blind, placebo-controlled, phase III clinical trials (BLOOM, BLOSSOM and BLOOM-DM).[3,7,8] All three studies included patients who were either obese or overweight (BMI = 27 – 45 kg/m^2). The BLOOM and BLOSSOM studies showed that with the standard dose of lorcaserin, just over 47% of study participants had at least a 5% weight loss and a mean weight loss of 5.8 kg in one year. This was

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statistically significant when compared to placebo ($p < 0.001$ for both).[7,8]

The BLOOM study was extended for another year to determine if patients would need to continue lorcaserin to maintain the 5% or greater weight loss they achieved in the first year. This notion was confirmed based on year two results of the study, revealing that the 67.9% of the patients who remained on lorcaserin maintained their weight loss compared to the 50.3% of patients who maintained their weight loss after switching to the placebo ($p < 0.001$). The BLOSSOM study, which compared lorcaserin 10 mg twice daily dosing to 10 mg once daily dosing, showed that the twice daily dosing was statistically more efficacious based on mean weight loss (-5.8 kg vs. -4.7 kg, $p < 0.001$) and the percent of patients with at least a 5% weight loss in one year (47.2% vs. 40.2%, $p < 0.001$) [8] Because of this study, the standard dose of lorcaserin is 10 mg twice daily.

Both BLOOM and BLOSSOM showed that lorcaserin was well tolerated. The most common side effects included fatigue, headache, dizziness, dry mouth, and nausea. One of the major concerns with previous serotonin agonists used for weight loss (fenfluramine and dexfenfluramine) was valvulopathy disease of the heart valvues. Both studies reported no difference in the incidence of valvulopathy with use of the new agent when compared to placebo, due to lorcaserin's selectivity to the 5-HT_{2C} receptor. On the other hand, non-selective 5-HT receptor agonists activate the 5-HT_{2B} receptors on the mitral and aortic valves in the heart, which is the proposed mechanism for valvulopathy.

The final clinical trial, BLOOM-DM, studied the effects of lorcaserin on diabetic patients.[3] The 52 week trial revealed that in the group given lorcaserin 10 mg BID, 37.5% achieved at least a 5% weight loss (compared to 16.1% in the placebo group, $p < 0.001$) and achieved a mean weight loss of 4.7 kg (compared to 1.6 kg in the placebo group, $p < 0.001$). The numbers were not as impressive as those for non-diabetics, because diabetics have much more difficulty losing weight. The additional weight loss aided by lorcaserin may be crucial in preventing microvascular and macrovascular complications in diabetic patients.

Phentermine/ topiramate extended-release (PHEN/TPM) causes weight loss through multiple mechanisms.[6] Phentermine causes a release of catecholamines in the hypothalamus, resulting in a reduced appetite and decreased food consumption. Topiramate's mechanism of action is not fully understood but it may be the product of a number of different pathways, including augmenting the activity of the neurotransmitter gamma-aminobutyrate, modulating voltage-gated ion channels, inhibiting AMPA/kainite excitatory glutamate receptors, and inhibiting of carbonic anhydrase. Agents with multiple mechanisms may have better long-term success because they may be able to circumvent the body's counter-regulatory adaptive mechanisms.[4] PHEN/TPM capsules include both an immediate release phentermine and delayed-release topiramate beads. PHEN/TPM should be taken once daily in the morning to avoid insomnia, but without regards to meals. The dose of the drug needs to be titrated up in the following way: 3.75 mg/23 mg once daily for 14 days, and then increased to 7.5 mg/46 mg once daily. If adequate weight loss is not achieved (at least 3% weight loss in 12 weeks), PHEN/TPM can be titrated up to a maximum dose of 15 mg/92 mg. The schedule IV medication should never be abruptly discontinued due to the risk of rebound seizures.

Like lorcaserin, PHEN/TPM is also contraindicated in pregnancy (category X). Currently patients can only obtain this drug from mail order pharmacies that are registered with the Qsymia Risk Evaluation and Mitigation Strategy (REMS) program. Female patients of childbearing age are required to take a pregnancy test before starting PHEN/TPM and then every month while still on the drug. The pharmacist must counsel female patients to be on appropriate birth control. If oral contraception is utilized, patients on PHEN/TPM may experience irregular bleeding due to the drug's effects on altering the exposure of estrogen and progestin. However, this will not increase the risk of becoming pregnant, and the drug should not be stopped. Other contraindications include glaucoma, hyperthyroidism and concomitant use of or within 14 days of taking monoamine oxidase inhibitors (MAO-Is).[6]

PHEN/TPM was shown to be safe and efficacious based on 3 double-blind, placebo-controlled, phase III clinical trials (CONQUER, EQUIP and SEQUEL).[9-11] The CONQUER study included patients who were either obese or overweight (BMI = 27 – 45 kg/m^2). Both the mid-dose (7.5 mg/46 mg) and

maximum dose (15 mg/92 mg) were shown to cause more patients to achieve at least a 5% weight loss (21% vs. 62% vs. 70%, placebo, mid-dose and maximum dose respectively; $p < 0.001$ for both treatment groups compared to placebo) and a greater mean weight loss (-1.4 kg vs. -8.1 kg vs. -10.2 kg, placebo, mid-dose and maximum dose respectively; $p < 0.001$ for both treatment groups compared to placebo).[9] PHEN/TPM was generally well tolerated, with dry mouth, paraesthesia, dysgeusia and insomnia as the most common side effects.

In the EQUIP study, PHEN/TPM was shown to be efficacious in patients who belong to obesity class II and III (BMI ≥ 35 kg/m^2). At the maximum dose, 66.7% of patients achieved a 5% weight after one year, compared to 17.3% in the placebo group ($p < 0.0001$).[10] The SEQUEL study, a 52-week extension of the CONQUER study, aimed to determine if patients would need to continue PHEN/TPM to maintain the 5% or greater weight loss they achieved in the first year. More patients who remained on PHEN/TPM maintained their weight loss from the first year of therapy (79.3% vs. 30%; $p < 0.0001$).[11]

Both lorcaserin and phentermine/topiramate appear to be efficacious and safe for chronic weight management as adjuncts to diet and exercise in patients with a BMI of 30 kg/m^2 or a BMI of 27 kg/m^2 or greater in the presence of at least one risk factor (hypertension, type 2 diabetes mellitus, or dyslipidemia). Advantages common to both agents include greater weight loss compared to orlistat, and positive effects on patients' lipid panels, blood pressure, and HbA1C in long term management, as evidenced by the safe and efficacious use for long-term management (108 weeks).[7-11] The placebo-controlled clinical trials suggest that PHEN/TPM may cause more weight loss than lorcaserin; however, no head-to-head studies have been conducted.[12] PHEN/TPM may be the preferred agent in patients with class II or III obesity. Because agents (SSRIs and SNRIs) commonly used in depression can interact with lorcaserin resulting in serotonin syndrome, PHEN/TRM may be preferred over lorcaserin in patients with depression, even though lorcaserin has less potential for adverse side effects and higher tolerability. Both of these agents will provide clinicians with more options for obese patients in need of pharmacotherapy. It is important to remember that the goal of pharmacotherapy when using these agents is not to alter the patient's body for cosmetic reasons, but rather to reduce the risk of acquiring or exacerbating obesity-related comorbidities and to improve the quality of life.

Drug	Dosage forms and strengths	Usual dose
Lorcaserin	10 mg tablets	10 mg BID
PHEN/TPM	Capsules in the following strengths (PHEN/TPM): • 3.75 mg/23 mg[α] • 7.5 mg/46 mg • 11.25 mg/69 mg[α] • 15 mg/92 mg	3.75 mg/23 mg (PHEN/TPM) QD for 14 days then increased to 7.5 mg/46 mg (PHEN/TPM) QD[β]

Table 1: Comparison based on dosage forms and strengths and the usual dose.[2,5,6,12]

QD = once daily, BID = twice daily, TID = three times a day, PHEN/TPM = phentermine/ topiramate extended-release
[α]For titration purposes only
[β]If a patient has not lost at least 3% of baseline body weight in 12 weeks on 7.5 mg/46 mg, discontinue the drug or escalate the dose by increasing to 11.25 mg/69 mg (PHEN/TPM) QD for 14 days and then increasing to 15 mg/92 mg (PHEN/TPM) QD. Patients who do not achieve at least a 5% weight loss in 12 weeks using the maximum dose should discontinue the drug.

Drug	At least 5% weight loss in one year	Mean weight loss in one year
Lorcaserin	47%	-5.8 kg
PHEN/TPM	62% (mid-dose) 70 % (max dose)	-8.1 kg (mid-dose) -10.2 kg (max dose)

Table 2: Comparison based on percent of patients to achieve at least 5% weight loss in one year and

PHEN/TPM = phentermine/ topiramate extended-release, mid-dose = 7.5 mg/46 mg, max dose = 15 mg/92 mg

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Exhibit

OPINIONS

Take a Chance!

By: Praneeta Nagraj, PharmD Candidate c/o 2015

Summer is a great time to recover from the school year through reflection and relaxation, but it's also the perfect opportunity to develop your career and discover where you belong within the pharmacy profession, which can be realized through work or an internship. What if I told you that attending some of the many conferences for student pharmacists would allow you to do all of the above?

What are my top 5 reasons for being a member of pharmacy organizations and attending the conferences?

1. Builds your network:

Contrary to what many students believe, Pharmacy is a small world. Thus it is crucial to build your network, and it's never too soon to start doing so. You never know- you could run into a prospective employer, a possible internship, or even a mentor.

This past APhA Annual Meeting in Los Angeles, as I was grabbing a cup of coffee, I ran into a sweet Pharmacist named Mary from Texas who later went out of her way to introduce me to the Dallas area president so that I would have a connection in my home state of Texas. While conversing with this pharmacist, I found out she worked at Pfizer and that she actually created her own position. Since our first meeting, she has become somewhat of a mentor to me.

During the Pharmacist Society of the State of NY Annual Conference (PSSNY) in Queens, I met students at the University of Buffalo and gained an understanding of where the other NY students would like to see Pharmacy go in NY state in the coming years, especially when we are all out in the work force. Hopefully, next year, there will be plenty more St. John's students at the PSSNY conference and every St. John's Pharmacy student will at least be a member of the society.

As evidenced by my experience, pharmacy events and organizations allow you to network professionally with not only pharmacists and companies, but also with fellow students from across the country. Working with students from other schools in the area or even competing over a project can be a fun way of getting everyone involved while making a huge difference in the respective communities.

2. Expands and challenges your mind:

One of the greatest things traveling within the professional world is what you end up learning through it. I was unsure about whether it would be worth it to go to the DIA Annual Convention in Boston last June. Looking back, I found the conference rewarding.

The first general opening session of the conference featured a well-known physician, scientist, and inventor: Dr. Daniel Kraft. His session highlighted the progress of healthcare and its future evolution because of technological changes. I was captivated by his lecture, as he spoke about all the latest advances

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in healthcare, the future of telemedicine, robotics in surgery, using virtual imaging, etc. He emphasized the proactive approaches to improving patient health early in the course of a disease, for example, our focus on fighting cancer lies at stage one of the disease, if not stage zero.

Another take home point from his lecture was the increasing demand for Pharmacists in the community to educate patients in self-care. Patients can be taught to play a greater role in managing their own disease states, especially with tools such as cell phone apps.

3. Reignites and/or ignites a passion for your profession.

We are the future of Pharmacy, and we should actively decide what this future will entail. We have to leave the confines of our classrooms and get out into the community, get involved in organizations, and attend a conference to really get excited.

As students, we can influence what it means to be a pharmacist amidst the changing healthcare landscape. It can be as simple as a petition or it can be a creative patient care project that goes viral and eventually spreads to get political attention. The possibilities are endless, and it's up to us to start thinking outside the box and asking how we will make a difference.

As today's youth, empowered with social media, we can bridge the gap between innovations and the older population. Healthcare and technology are merging. Because of this we are beginning to see more personalization with social media driven apps.. The theme at both the APhA and the PSSNY conferences was patient education, which just might be the golden ticket and the most prominent aspect of our future with MTMs and CDTM.

4. Keeps you focused on pharmacy school.

How can being involved in all of this possibly keep you focused on school? You get to see the big picture! Thinking of creative project ideas or a career path gives you the discipline to work hard on academics. You may even start to find school and studying more enjoyable, and you might decide to pursue research with a Professor as a result. Always keep an open mind!

We are the new generation of Pharmacists and by getting out into the community you are already beginning to make your mark.

5. They are fun!

Patient care projects, events, and especially conferences are a lot of fun! What makes them worth it is what you get out of these events and how much you enjoy yourself at them.

From the student socials at the Mid-year and annual APhA conferences with plenty of dance offs and great music to a Boat Party at the PSSNY conference, there are plenty of ways to meet fellow student Pharmacists in a relaxed environment. Experience a camaraderie while mingling with student pharmacists, doctors, and other future healthcare professionals, such as the Gatsby themed party in a castle or a party in an aquarium at the DIA annual conference. After all, we are a family.

Bottom line, take a chance and get involved!

It is never too late or too early to join and start building your network. Whether you are in your first or last year of school, I challenge you to ask yourself the question: How will I make my mark?

Has your article been published in an issue of the Rho Chi Post?

If so, congratulations!

Here is a suggested format for citing / referencing your work:

[Author(s)]. [Article Title]. Rho Chi Post. [Year and Month Published]. [Volume]([Issue]):[Pages].

To view some examples visit:

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Drugs and Diseases: The Survival Method

By: Beatrisa Popovitz, Staff Editor

OPINIONS

You may have heard the countless horror stories passed on by upperclassman of how D&Ds seep into the crevices of our brains and take over our psyches to inevitably make us breathe, sleep, and speak pharmacy. Stressing out over exams and investing what may seem like all of your time and energy into studying most probably has become the norm until this point, and unfortunately will continue as you begin the fourth year of this program. The transition may not seem easy, but if you create your own plan of action you can get yourself into the correct frame of mind to succeed in these classes. Here's how:

Get Organized.

Organization is the key to success. Or at the very least, it is a critical tool in acquiring a sense of direction in the midst of the madness that D&Ds generate. This means colorful pens, countless highlighters, subject dividers, binders, desktop folders, Dropbox accounts, iPad® notetaking programs – whatever it takes for you to feel comfortable and to keep your notes at hand.

all students are in the same, rocky boat

There are typically two different teams you can play on to tackle the note-taking task for these courses: team type or team print. Some students find themselves to be more focused when they handwrite their notes on printed PowerPoint presentations, while others find typing their notes under PowerPoint slides to be quicker and clearer for future reference. Typing makes note sharing via email or flash drive easier, and helps facilitate the creation of review sheets by allowing you to copy and paste into an organized document. However, it is strongly advised to print out medicinal chemistry notes, for chemical structures and figures are very difficult to generate on a computer. It is nearly impossible to follow along and draw structures on a regular computer. Some students, however, with iPad® drawing programs have found a unique way to utilize technology for this particular subject. This is a great time to invest in highlighters and colorful pens to help you follow along in class.

Creating review sheets is a great way to summarize information. They allow you to focus on the most important things to remember. In fact, some professors will even give you an outline of material to cover for their exams questions. A good way to avoid getting overwhelmed by all the material presented to you is to split the work amongst members of a study group, or in some cases, the entire class.

Although it may have felt liberating in the past to get rid of old notes and empty your hard drives once a class has ended, for these classes, that isn't really an option. I strongly advise you to hold onto your notes for future references on rotations and for the NAPLEX exam. While some information will inevitably become outdated, your notes will serve to be very helpful nevertheless.

Get a calendar or a planner, or utilize these features on your phone or computer. Keep your schedule organized so you know exactly how much time you have to study for each section. Also, keep close track of your recitation schedules, for they sometimes do not correlate with the upcoming exams.

Pace Yourself!

You are most likely not a stranger to the age-old advice given by countless professors over the years: "Don't procrastinate, study a little bit each day." You probably didn't take that advice to heart and found yourself staying up until the wee hours of the morning clutching a pot of coffee cramming your brain with information. That may have gotten you this far, and may have even brought you good grades. However, as you enter the world of D&Ds, you should take this advice seriously and acquire study habits in

Creating review sheets is a great way to summarize information.

which you allocate a couple hours out of your day rather than waiting until the last minute to cram. If you wait and cram, you're just making life ten times harder on yourself, and risking not passing exams. Not to mention, you'd be less likely to remember this information for your boards and for your future. Ba-

sically, with D&D, the end result is a very accurate reflection of your study investment.

A typical D&D course usually consists of a few days of pathophysiology, followed by pharmacology, medicinal chemistry, and therapeutics. There is simply too much material to be left for last minute studying. There are also weekly recitation quizzes, which are credited towards your grade, and practically "force" students into studying ahead of time and staying atop of the material.

There are typically two different teams you can play on...team type or team print.

Taking the time to truly understand the material can lighten the load, but memorization is unavoidable. In fact, the bulk of your studying will be memorization, especially when dealing with the medicinal chemistry portion. My advice here is to create associations in your mind and employ mnemonics. The earlier you start memorizing, the easier it will be come test time.

Use index cards to make flashcards to aid in memorization. This way, you can have easy access to study materials on the go, and you can study a little bit with any down time you get.

When you set out to study for a D&D exam, there may be several methods you may wish to utilize. Some students prefer to study in sections, i.e. first studying all pathology lectures for several diseases, then all medicinal chemistry lectures, etc. Others may prefer to study by disease state, i.e. the pathology, medicinal chemistry, and therapeutics for a particular disease before moving onto another disease for which they are also being tested on. Find what works best for you and stick to it!

Buddy Up!

During high school and early years of college, competition amongst peers may have been quite fierce. However, once you've made it as far as D&Ds, it becomes apparent that camaraderie overshadows competition – all students are in the same, rocky boat.

Finding a study partner with similar habits to yours makes preparing for these exams much easier. Even if you like to study silently, having a classmate at your side is useful if any questions arise, and also to remind you that you're not alone through this!

Study groups allow you to talk things out and put your knowledge to the test before exam days. They only work if everyone is on the same page, so make sure to study before meeting up!

Social media becomes very useful to facilitate the organization of your class events and file sharing. Be sure to create an online group for your classmates to serve as a forum for exchanging ideas and notes. Websites such as Dropbox are great to help store and keep track of lectures and recordings. These tools should be organized appropriately to ensure proper use by all members.

Due to schedule conflicts, there will be times that you simply cannot meet up with a group. Google Documents is a really helpful tool to allow you and your classmates to create a review sheet and update it in real-time.

Breathe.

It is important to take care of yourself and to try to manage your stress despite the time constraints. Exercise and stress coping activities like yoga can help maintain a healthy balance in your life. Be sure to reward yourself by taking short walks or snack breaks after finishing a hard section of material, and take time to enjoy the day after the D&D exam!

Sure, D&Ds may appear scary and overwhelming at first, and it will take some time to transition into what may seem like studying on steroids. However, if you approach these courses with optimism, organization, patience, teamwork, and dedication, you will get just as much out of it as you put in. As you enter D&Ds, you are now ready to put to use all the science courses you've studied in over the past few years. This is actually a quite interesting time in your pharmacy careers as you learn what is most essential for your role as a pharmacist in society.

Follow the survival plan, and if you ever find yourself discouraged or overwhelmed, just remember that your hard work will definitely pay off in the future. Just keep swimming.

Word Search: Drug Top 200 Challenge

By: Tamara Yunusova, Senior Staff Editor

How well do you know the Top 200 Drugs? For each generic name listed below, find the corresponding brand name in the puzzle. Note: This puzzle contains brand names only. Good luck!

a	i	e	e	x	o	r	m	i	i	n	o	u	n
a	o	p	u	i	d	i	o	r	h	t	n	y	s
n	u	o	g	l	u	c	o	p	h	a	g	e	i
m	s	g	o	c	e	s	o	l	i	r	p	x	l
o	i	c	m	t	s	e	a	t	l	m	o	a	l
v	x	c	x	e	e	a	o	m	i	u	s	n	p
a	a	n	r	c	n	n	v	i	o	i	h	a	r
r	m	p	h	o	z	t	o	r	x	x	s	x	o
m	o	b	n	c	z	o	i	r	o	e	i	n	i
l	r	t	i	r	i	i	l	n	m	n	s	l	g
s	h	x	i	e	n	i	d	o	c	i	v	c	t
i	t	y	i	p	n	a	t	e	f	n	n	t	n
l	i	v	i	n	i	r	p	r	h	t	o	t	a
i	z	o	c	o	r	l	i	o	c	o	c	p	d

Setraline
Furosemide
Zolpidem
Metoprolol Tartrate
Oxycodone/ APAP
Esomeprazole
Hydrocodone/ APAP
Lisinopril
Simvastatin
Levothyroxine
Amoxicillin
Azithromycin
Hydrochlorothiazide
Alprazolam
Metformin
Atorvastatin
Omeprazole
Amoxicillin/ Clavulanate
Atenolol

Answers

PUZZLES

Look-Alike Sound-Alikes

By: Frances Trosa, PharmD Candidate 2015

Many drugs

LOOK – ALIKE

OR

SOUND– ALIKE

Causing them to be easily mixed up in practice.

Can **YOU** match these facts with the correct medication?

1. A diuretic that works by inhibiting the reabsorption of sodium and chloride in the ascending loop of Henle
2. The elderly population may be at increased risk for torsades de pointes and ototoxicity when taking this drug
3. A known adverse effect of this drug is abnormal dreams. This drug is a strong inducer of CYP3A4, and inhibitor of 2C19, 2C9, and 3A4
4. Patients taking this antidepressant should be told to monitor their blood pressure, due to this drug's ability to increase blood pressure
5. This antiplatelet agent is only approved for use in patients who are to be managed with percutaneous coronary intervention
6. This drug interferes with DNA synthesis by blocking the methylation of deoxyuridylic acid
7. A tricyclic antidepressant that is not FDA approved for the treatment of bipolar depression due to its ability to worsen psychosis
8. An eye drop for the treatment of allergic conjunctivitis
9. A high fat meal increases bioavailability of this serotonin receptor agonist
10. This drug inhibits platelet activation and fibrin clot formation by inhibiting factor Xa

A. Efudex

B. Erythromycin

C. Eliquis

D. Elavil

E. Efavirenz

F. Effexor

G. Effient

H. Elestat

I. Ethacrynic acid

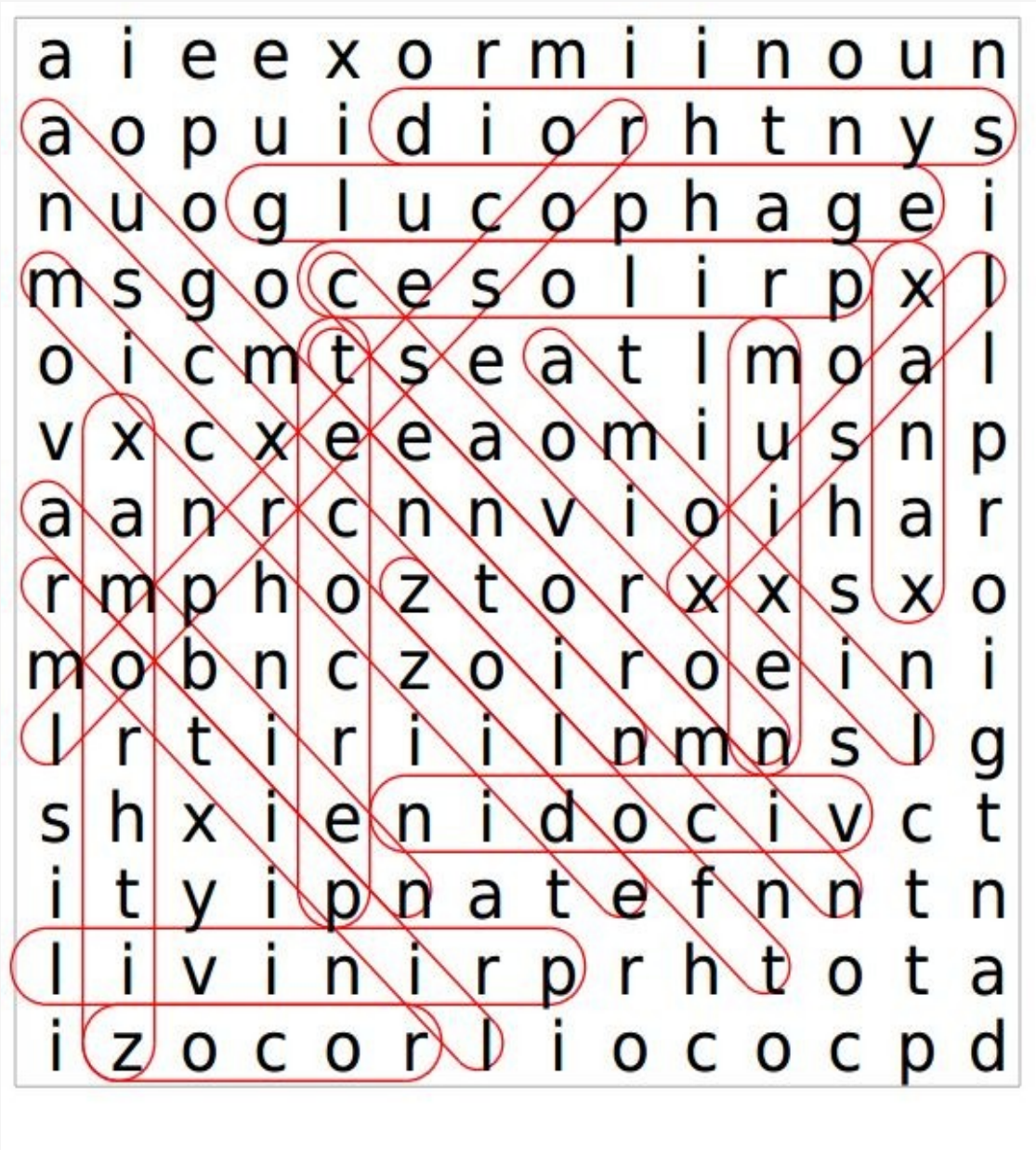
J. Eletriptan

Answers

Lexi-Comp OnlineTM , Lexi-Drugs OnlineTM , Hudson, Ohio: Lexi-Comp, Inc.; July 29, 2013

How Did You Do???

Answers to Word search & Look Alike and Sound Alike



a	i	e	e	x	o	r	m	i	i	n	o	u	n	
a	o	p	u	i	d	i	o	r	h	t	n	y	s	
n	u	o	g	l	u	c	o	p	h	a	g	e	i	
m	s	g	o	c	e	s	o	l	i	r	p	x	l	
o	i	c	m	t	s	e	a	t	l	m	o	a	l	
v	x	c	x	e	e	a	o	m	i	u	s	n	p	
a	a	n	r	c	n	n	v	i	o	i	h	a	r	
r	m	p	h	o	z	t	o	r	x	x	s	x	o	
m	o	b	n	c	z	o	i	r	o	e	i	n	i	
l	r	t	i	r	i	i	l	n	m	n	s	l	g	
s	h	x	i	e	n	i	d	o	c	i	v	c	t	
i	t	y	i	p	n	a	t	e	f	n	n	t	n	
l	i	v	i	n	i	r	p	r	h	t	o	t	a	
i	z	o	c	o	r	l	i	o	c	o	c	p	d	

Zoloft
Lasix
Ambien
Lopressor
Percocet
Nexium
Vicodin
Prinivil
Zocor
Synthroid
Amoxil
Zithromax
Microzide
Xanax
Norvasc
Glucophage
Lipitor
Prilosec
Augmentin
Tenormin

LASA: 1) I 2) B 3) E 4) F 5) G 6) A 7) D 8) H 9) J 10)

Do you enjoy our puzzles? Send us a suggestion for a brainteaser at:

rhochipost@gmail.com

We will feature your work in our next issue!

RHO CHI POST: EDITORIAL TEAM

EDITORS

@ Katharine Cimmino ***(5th Year, STJ; Editor-in-Chief)***
I have always been an avid reader and writer. As a member of the Rho Chi Post I am able to merge my passions with the professionalism that comes with aspiring to be a healthcare provider. I am eager to be a part of a publication that promotes my interests and vocation.

@ Bharat Kirthivasan ***(PhD Candidate, STJ; Co-Copy Editor [Content-Focused])***
I am a doctoral candidate in Industrial Pharmacy researching nanoparticles for delivery to the brain. The only thing I enjoy more than reading a well-written piece of work is writing it. I am glad to work for the Rho Chi Post, and I encourage others to do the same.

@ Hayeon Na ***(5th Year, STJ; Co-Copy Editor [Content-Focused])***
Hello! My name is Hayeon Na. I am a 2015 PharmD Candidate and one of the Copy Editors for the Rho Chi Post. I hope the information I present will be helpful, or at least interesting. If you have any comments regarding my contribution, feel free to contact me at any time!

@ Tasnima Nabi ***(4th Year, STJ; Co-Copy Editor [Content-Focused])***
Writing has always been my greatest outlet for experience and knowledge, through which I hope to keep you engaged and informed. It is imperative to keep up with our changing profession and community, and I look forward to bringing pertinent information to the newsletter.

@ Aleena Cherian ***(6th Year, STJ; Co-Copy Editor [Graphics-Focused])***
The Rho Chi Post has been a source of current information and great advice to students and professionals in this evolving profession. After years of experience in media and graphics-related work, it is now my privilege to be a part of this endeavor as a Co-Copy Editor. I hope you learn as much from future editions of the newsletter as I have, and I welcome your feedback!

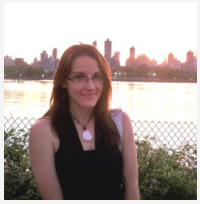
@ Melissa Roy ***(5th Year, STJ; Co-Copy Editor [Graphics-Focused])***
We as future healthcare professionals owe it to our patients and ourselves to become aware and current on the events affecting our profession. The Rho Chi Post is our way to learn new things and stay in touch with the pharmacy world, on- and off-campus. I have gained so much from reading previous publications and feel privileged to have the opportunity be a part of the team. Feel free to reach out to me with suggestions and comments.

@ Erica Dimitropoulos ***(5th Year, STJ; Senior Staff Editor)***
As busy student pharmacists, we often fail to keep current with healthcare developments. My aim is to sort through the news and provide quick updates that are important to our profession. Feel free to contact me if there are any topics you would like to see covered in the next issue!

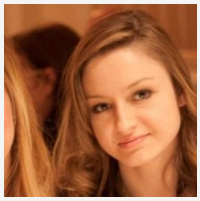
RHO CHI POST: EDITORIAL TEAM

@ Tamara Yunusova ***(3rd Year, STJ; Senior Staff Editor)***
My name is Tamara Yunusova, and I am a 3rd year Pharm D candidate at St. John's University. I enjoy articulating information in a captivating and insightful way. I hope to make this publication more informative, student-friendly, and innovative.

@ Beatrice Popovitz ***(5th Year, STJ; Staff Editor)***
I am eager to relay current information on interesting topics making waves in the world of healthcare pertinent to the advancement of our profession. As student pharmacists, we are molding the future of our profession, and the Rho Chi Post facilitates the cultivation of a relationship (between students, faculty, and other members of the healthcare community) to share ideas and spread awareness of various issues. Feel free to contact me if you would like to share your ideas with other members of the University community through this platform.



@ Diana Gritsenko ***(5th Year, STJ; Staff Editor)***
I am proud to serve as an editor for the Rho Chi Post. The Post combines my love for Pharmacy and writing and I am glad to share that passion with all of you! I look forward to working with you and sharing this amazing opportunity!



@ Ada Seldin ***(5th Year, STJ; Staff Editor)***
I am thrilled to have become a new member of the Rho Chi Post team. I hope to further strengthen the goals of this newsletter and make a lasting contribution. It is important, as future pharmacists, to collaborate with our peers, as well as accomplished professionals in the field. Rho Chi Post provides a vehicle to voice our opinions and share relevant news.

@ Sang Hyo Kim ***(2nd Year, STJ; Staff Editor)***
Advancements of technology and developments of new medicines, prolonging the lifespan and improving the quality of life, have increased the geriatric population. In years to come, pharmaceutical industries and healthcare systems will persistently work to find solutions to changing demands and new problems of the society. Through the Rho Chi Post, I wish to learn, educate, and prepare myself and others for the future.

@Davidta Brown ***(3rd Year, STJ; Staff Editor)***
My two great loves are innovative science and quality writing, and the Rho Chi Post is an insightful combination of both. As an editor, I look forward to bringing relevant information and fresh perspectives to the student and faculty of St. John's University, as well as to making the Rho Chi Post a newsletter that offers something new to every reader.

@ You!

We are always looking for creative and motivated students to join our team!

If you are interested in becoming an editor for the Rho Chi Post, please visit:
http://rhochistj.org/RhoChiPost/EditorApplication

EDITORS

RHO CHI

The Rho Chi Society encourages and recognizes excellence in intellectual achievement and advocates critical Inquiry in all aspects of Pharmacy.

The Society further encourages high standards of conduct and character and fosters fellowship among its members.

The Society seeks universal recognition of its members as lifelong intellectual leaders in Pharmacy, and as a community of scholars, to instill the desire to pursue intellectual excellence and critical inquiry to advance the profession.

THE RHO CHI POST

MISSION

The Rho Chi Post is a monthly, electronic, student-operated, dean-approved publication that aims to promote the pharmacy profession through creativity and effective communication. Our publication is a profound platform for integrating ideas, opinions, and innovations from students, faculty, and administrators.

VISION

The Rho Chi Post aims to become the most exciting and creative student-operated newsletter within St. John's University College of Pharmacy and Health Sciences. Our newsletter continues to be known for its relatable and useful content. Our editorial team continues to be known for its excellence and professionalism. The Rho Chi Post essentially sets the stage for the future of student-operated publications in pharmacy.

VALUES

Opportunity, Teamwork, Respect, Excellence

GOALS

1. To provide the highest quality student-operated newsletter with accurate information
2. To maintain a healthy, respectful, challenging, and rewarding environment for student editors
3. To cultivate sound relationships with other organizations and individuals who are like-minded and involved in like pursuits
4. To have a strong, positive impact on fellow students, faculty, and administrators
5. To contribute ideas and innovations to the Pharmacy profession

CURRENT EXECUTIVE BOARD

Zinnia, Majd, Moisey, Elissa, and Anh at the 2013 Induction Ceremony

President: **Moisey Rafailov**
Vice President: **Majd Ahmad**
Secretary: **Elissa Tam**
Treasurer: **Anh Nguyen**
Historian: **Zinnia L. Yu**

Faculty Advisor: **S. William Zito, PhD**

UPCOMING EVENTS

Sept 22-24: 2013 AACP Annual Meeting: Clinical Pharmacology in Optimizing Drug Development and Therapeutics
Rutgers Campus, New Jersey

Oct 18-19: NYSCHP– Diabetes Practice Based Program
Fresh Meadows, New York

Oct 18-19: NYSCHP– Managing Traditional and Contemporary Antithrombotic Therapy Principles
Fresh Meadows, New York

Oct 20: NYSCHP– Pharmacist's Guide to Biosimilars– Regulatory, Therapeutic and Practical Concerns
Queens, New York