issn

international society of sports nutrition™

The ISSN - Why Go Anywhere Else?!™

The 11th Annual ISSN Conference

Clearwater Beach FL
June 20-21, 2014

A Sports Supplements Extravaganza!

EARN your CEUs too!

CDR (15), NATA (15), ACSM (15), NSCA (1.5), NASM (1.5), ISSN (2.0)

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Welcome

Welcome! At the ISSN Conference, you'll meet the coolest sports nutrition and fitness fanatics ever in the history of mankind! Okay, maybe not. But you'll learn a lot and rub elbows with an awesome group of sports nutrition experts. Please give many thanks to Dr. Lem Taylor. Dr. Taylor has spearheaded the ISSN Conference program over the last three years and has done a superlative job. Dr. Bill Campbell will take the helm for the 2015 Conference in 'Don't Mess With Austin Texas.'

Cheers,

Jose Antonio

Jose Antonio, Ph.D

International Society of Sports Nutrition

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The ISSN - Why Go Anywhere Else?™

11th Annual ISSN Conference and Expo

Summary of Program

Event and LOCATION

1. **Advisory Board Dinner** *(sponsored by Kemin)* - **WATER'S EDGE BALLROOM A-B**
2. **CISSN/SNS Review and Exam** – **SALONS F**
3. **Exhibit Hall** – Vendors, Poster Presentations, Ice Cream Social – **SALONS A-E**
4. **General Session A – Research Track** – SALON F
5. **General Session B – Practical Application Track** – **SALONS G**
6. **Attendee Registration** – **BANQUET FOYER D-G**
7. **Party on the Beach/Happy Hour/Beach Olympics**
   [by Billy Beck CISSN] – **SANDPIPER/BLUE HERON DECK**

Thursday, June 19

2:00PM - 5:00PM:	Attendee Registration
2:30PM – 5:30PM:	CISSN/SNS Examination – *proctored by* Darryn Willoughby PhD FISSN
6:00PM – 9:00PM:	Advisory Board Dinner – *by invitation only (Sponsored by Kemin)*

Friday, June 20

7:00AM - 5:00PM:	Attendee Registration
9:00AM - 12:00PM:	Exhibit Hall set up
12:00PM - 2:45PM:	Exhibit Hall Open (Get free boxed lunch in Exhibit Hall)
5:45PM - 8:30PM:	Happy Hour for EVERYONE! *Compete in the Beach Olympics organized by Billy Beck III* – SANDPIPER/BLUE HERON DECK *(In the event it rains, please go to the WATER'S EDGE BALLROOM)*

Saturday, June 21

8:00AM – 12Noon:	Registration
12:00PM - 2:10PM:	Exhibit Hall open
12:00PM	Please put your posters up in the Exhibit Hall *(Authors required to be by poster from 12:30pm-2pm)*
12:30PM - 2:00PM:	POSTER PRESENTATIONS in the Exhibit Hall *(Get Ice Cream too!)*
2:10PM - 4:00PM:	Exhibit Hall Breakdown

Schedule of Events

International Society of Sports Nutrition

Day 1: Friday, June 20	**SALON F Research Track**	**SALON G Practical Application Track**
Morning Session	**Moderator David Sandler MS FISSN**	**Moderator Shawn M. Arent PhD FACSM CSCS**
8:30am-9:20am	**JDominic D'Agostino PhD** *Topic: Metabolic Strategies for Enhanced Mental and Physical Performance* **Sponsored by the ISSN**	**Juan Carlos Santana FNSCA** *Topic: Weight Cutting Strategies for Elite Mixed Martial Arts Fighters* **Sponsored by the ISSN**
9:20am-9:30 am	**10 Minute Break**	
9:30am-10:20am	**Krista Varady PhD** *Topic: Alternate Day Fasting: Effects on Health and Body Composition* **Sponsored by the ISSN**	**Shawn M. Arent PhD FACSM CSCS** *Topic: The Science of Soccer: Integrating Testing, Training, and Nutritional Strategies to Optimize Performance*
10:20am-10:30 am	**10 Minute Break**	
10:30am-11:20am	**Darryn Willoughby PhD FISSN** *Topic: Ursolic Acid Supplementation: A Comparison with Leucine in mTORC1 Up-Regulation*	**Michael Ormsbee PhD CSCS FISSN** *Topic: Nutritional Strategies to Maintain Muscle Mass while Training for Endurance Sports*
11:20am-11:30pm	**10 Minute Break**	
11:30am-12:30pm	**The Roger Harris Lecture** **BASIC SCIENCE KEYNOTE** **Mark Tarnopolsky MD PhD FRCPC** *Topic: Creatine – Not Just for Sports* **Sponsored by The ISSN**	
12:00pm-2:30pm	**FREE Lunch Provided in the Exhibit Hall** 	
Afternoon Session	**Moderator Abbie Smith PhD FISSN**	**Moderator Marcela Lucena RD**
2:30pm-3:20pm	**Oliver Catlin (BSCG), Paul Klinger (Informed Choice)** *and* **John Travis (NSF)** *Topic: Isn't Every Elite Athlete on PEDs? Oh No! It Must Be Tainted Supplements: Informed Choice/NSF/Anti-Doping Debate*	**Steven Orris MS CSCS USAW CISSN** *Topic: Strength Training and Sports Nutrition for the College Athlete – Real World Advice*
3:20pm-3:30 pm	**10 Minute Break**	
3:30pm-4:30 pm	**Tim Ziegenfuss PhD FISSN** *Topic: A Novel Hydrolyzed Chicken Sternal Cartilage Extract on Connective Tissue Protection and Functional Recovery from Exercise in Healthy Adults: A Pilot Study* **Sponsored by BioCell Technology Inc**	**Laurie Black PhD** *Topic: Donut Indulgence: Can Exercise Mitigate Gluttony?* **Sponsored by the ISSN**
4:30pm-4:40 pm	**10 Minute Break**	
4:40pm-5:30pm	**Abbie Smith-Ryan PhD FISSN** **Layne Norton PhD** **Dominic D'Agostino PhD** **Mike T Nelson PhD** *Topic: Metabolic Adaptation: A Point-Counterpoint Discussion*	**Erica W. Stump Esq** *Topic: How Do You Know When a Food or Supplement Company is Lying to You? Claims vs. Puffery*
5:45pm-8:15pm	***HAPPY HOUR and FOOD – Sandpiper/Blue Heron Deck***	

Day 2: saturday, June 21	**SALON F Research Track**	**SALON G Practical Application Track**
Morning Session	**Moderator Erik Bustillo RD CISSN**	**Moderator Neil Williams CISSN**
9:00am-9:50am	**Shawn Wells MPH RD CISSN and Gabriel Wilson PhD** *Topic: Leucine, HMB, and Amino Acid Metabolites Support Muscle Growth and Athletic Performance* **Sponsored by Metabolic Technologies**	**Jordan Moon PhD** *Topic: Accurately Tracking Individual Changes in Fat and Muscle Mass* **Sponsored by MusclePharm**
9:50am-10:00 am	**10 Minute Break**	
10:00am-10:50am	**Mike Roberts PhD** *Topic: Molecular Updates on the Effects of Phosphatidic Acid: Muscle Physiology and Beyond* **Sponsored by Chemi Nutra**	**Tony Ricci, MS FISSN** *Topic: Strength and Conditioning for the Elite MMA & Combat Athlete: What you plan to do vs. What you are forced to do.* **Sponsored by MusclePharm**
10:50am-11:00pm	**10 Minute Break**	
11:00am-11:50am	**Jacob M. Wilson PhD and Ryan Lowery BS CSCS** *Topic: Fat Loss Strategies For Optimizing Body Composition* **Sponsored by the University of Tampa**	**William Llewellyn** *Topic: Arachidonic Acid – Role in Muscle Hypertrophy and Power* **Sponsored by Molecular Nutrition**
12:00pm-1:00pm	***Go to Exhibit Hall for Ice Cream to View the Poster Presentations***  	
1:00pm-2:00pm	***View Poster Presentations in Exhibit Hall*** *(Authors must be present at poster.)* ***Ice Cream Social in Exhibit Hall***	
Afternoon Session	**Moderator Lonnie Lowery PhD**	**Moderator Chris Martinez CISSN**
2:00pm-2:50pm	**Jeff Volek PhD RD** *Topic: The Many Facets of Keto-Adaptation - Health, Performance, and Beyond* **Sponsored by the ISSN**	**Jo Lichten PhD RD** *Topic: Reboot Your Energy*
2:50pm-3:00 pm	**10 Minute Break**	
3:00pm-3:50 pm	**Brad Schoenfeld PhD FNSCA** *Topic: MAX Muscle: A Periodized Approach to Hypertrophy Training* **Sponsored by the ISSN**	**Douglas Kalman PhD RD FISSN** *Topic: Nutritional Oddities – Just Where Do All These Ingredients Come From?* **Sponsored by American College of Nutrition**
3:50pm-4:45 pm	**THE GRAND FINALE!** **Sue Kleiner PhD RD FISSN & Shar Sault** *Topic: Power Eating in the Kitchen - Fast and Easy Cooking*	

See you next year in Austin Texas for the

12th Annual ISSN Conference and Expo

June 19-20, 2015

Hee Haw !

Shawn M. Arent, PhD, CSCS*D, FACSM is an Associate Professor in the Department of Exercise Science at Rutgers University. He is the Director of the Rutgers IFNH Center for Health & Human Performance and is also the Kinesiology and Applied Physiology Graduate Program Director. Dr. Arent is a Certified Strength and Conditioning Specialist with Distinction with the NSCA and also a Fellow in ACSM. He completed his undergraduate degree at the University of Virginia and his MS and PhD at Arizona State University. His research focuses on the relationship between physical activity and stress and the implications for health and performance, with an emphasis on underlying mechanisms. His recent work has focused on physiological responses to training-related stressors and their contribution to optimal performance and recovery. Dr. Arent is on the national staff for the US Soccer Federation and works closely with a number of teams at Rutgers University.

Topic: **The Science of Soccer: Integrating Testing, Training, and Nutritional Strategies to Optimize Performance**
Structuring a sound training plan for certain sports at the youth, college, and even professional levels is often complicated by year-round demands, short but intense competitive seasons with frequent games, and a misunderstanding of the key physical factors most predictive of success, especially for power-endurance sports such as soccer. Furthermore, many coaches adhere to "traditional" training approaches rather than more efficient training with scientific support. These problems are typically compounded by a lack of knowledge of appropriate and necessary dietary considerations to facilitate pe rformance and recovery from intense training and games. This presentation will focus on establishing effective periodization approaches based on the level and seasonal demands of the sport. Additionally, application of technology to the training and testing model will be discussed and particular emphasis placed on the proper and effective application of heart rate monitor systems. By evaluating the capabilities of the athlete and the physiological demands of the different parts of the season, it becomes easier to devise sound nutritional strategies. It will be demonstrated how taking these considerations into account while planning yearly programs, testing programs, seasonal fluctuations in volume and intensity, weight training programs, and even nutritional requirements for the power-endurance athlete can lead to enhanced performance and decreased injury.

Laurie Black PhD, is a Columbus, Ohio native that is now a Professor of Kinesiology at California Baptist University in Riverside, California. She received both her Masters degree in Exercise and Wellness and her Doctoral degree in Physical Activity, Nutrition, and Wellness from Arizona State University under the guidance of Glenn Gaesser, PhD. Her research focuses primarily on exercise and metabolic markers in both normal and diabetic populations. As a former collegiate athlete she is also interested on various areas of sport performance and transfer of training. She stays active in her free time with cycling, running marathons, and resistance training.

Topic: **Donut Indulgence: Can Exercise Mitigate Gluttony?**
The Western Pattern diet has been characterized by having greater than 50 percent consumption coming from fat and sugar. This macronutrient allocation has been shown to have deleterious effects on body composition and related metabolic markers of cardiovascular disease. Exercise has been shown to improve vascular reactivity and metabolic markers related to cardiovascular health. With this being said, is regular exercise enough to mitigate the effects of a period of overconsumption similar to that seen over the holidays. Despite the addition of extra calories, exercise may be sufficient to prevent some adverse body composition outcomes associated with transient periods of excessive energy consumption.

Oliver Catlin (BSCG) - The Catlin Consortium is a well-regarded group of organizations dedicated to ensuring the safety of products for consumers, patients and competitors, as well as clean competing environments for athletes. Founded by longtime anti-doping pioneer Don Catlin, M.D., and his son Oliver Catlin and colleagues, The Catlin Consortium is comprised of three organizations: the nonprofit/NGO Anti-Doping Research, Inc. and the companies Anti-Doping Sciences Institute and Banned Substances Control Group.

Charlene Cribb. B.S is a Miss Natural Olympia World Figure Champion who has won just about every female figure/body-shaping contest there is to win in Australia, plus two-world drug tested titles – Ms Natural Olympia (Figure) consecutively. She knows a thing or two about getting in great shape. The Metabolic Precision System has been her secret to creating and maintaining an awesome contest-ready body, even though she hasn't competed for nearly ten years! Sharlene has the incredible skill of being able to whip up delicious, nutritious, gourmet-quality meals, any time, any where from virtually any ingredients.

Topic: **Power Eating® In The Kitchen: Fast & Easy Cooking** *(Presented by Sharlene Sault and Dr. Susan M. Kleiner)*. If there's enough motivation, anyone can follow a diet for a few weeks or even a few months. But then what? For some, eating clean means living on rabbit food or even worse, the bodybuilders' staple diet of rubber chicken breasts, green beans and boiled rice. Others equate healthy cooking with hours of preparation, a lot of mess and hassle for just one meal. It doesn't have to be that way; it shouldn't be that way. The thought of walking into the kitchen to prepare a great meal after a long, hard day at work is a notion many people are not prepared to do!!! Instead, they opt for the easier option: greasy, fast takeaway food. Either option puts you on the path to metabolic chaos. Optimal fueling yields optimal results. Under-fueling and under-carbing may give you short term weight loss, but you and your body will crash in the long run. Body sculpting is a result of fueling your muscles, beating the challenge and enhancing performance, not the other way around. You need to build up to create a sustainable training life and physique. Sure everyone is busy, everyone doesn't have a lot of time, but with a few simple strategies, a decent kitchen and a little practice, putting together a meal in less than 10 minutes is a real no brainer. Shar Sault will show you how to do it right the first time by demonstrating the Metabolic Precision system of Fast, Delicious and Nutritious right in front of you! And Dr. Sue will share the science behind the results!

Dominic D'Agostino PhD, is an Assistant Professor for the College Of Medicine Molecular Pharmacology & Physiology at the University of South Florida. The research he conducts in the laboratory develops and tests nutritional and metabolic therapies including ketogenic diets and ketogenic agents for CNS oxygen toxicity (seizures), epilepsy, metabolic disorders, Alzheimer's disease, ALS, muscle wasting and cancer. To investigate the mechanism of these pathologies Dominic and his colleagues use a variety of in vivo and in vitro techniques, including radio-telemetry (EEG, EMG), electrophysiology, fluorescence microscopy, confocal microscopy, atomic force microscopy (AFM), biochemical assays, in vivo bioluminescence imaging, behavioral testing and exercise performance.

Topic: **Metabolic Strategies for Enhanced Mental and Physical Performance**

Douglas Kalman PhD RD FISSN, is an Adjunct Professor in the Robert Stempel School of Public Health at Florida International University and a Director in the Endocrinology Research Lab at Miami research Associates. . He has been the Nutrition Program Consultant for IMG Academies in Bradenton, FL, and is currently the Sports Nutritionist for Florida International University (FIU - http://www.fiusports.com/) in the Athletics Department as well as being the Team Nutritionist for Coral Springs Aquatic Center. He has been involved in over 200 clinical trials and projects within the pharmaceutical, medical and nutrition fields. He has published over 75 abstracts and more than 30 peer-reviewed manuscripts. He is a Co-founder of the International Society of Sports Nutrition and Co-Editor of the Journal – JISSN (www.jissn.com).

Topic: **Nutritional Oddities – Just Where Do All These Ingredients Come From?**

This session will cover fun facts and heretofore unknown aspects about the nutrition industry. The speaker will discuss just how various vitamins, minerals and other supplements are originated, made, sourced and eventually put into the food supply. Dr Kalman will also share insightful information about food science that typically is under-appreciated by the masses. Everyone will get a laugh, new knowledge and be able to compete better of Jeopardy®!

Susan M. Kleiner, PHD, RD, FACN, CNS, FISSN maintains one foot in the academic world and one foot in the business world. After her doctoral research on the Influence of Dietary Fats and Cholesterol, and Anabolic Steroids, on the Lipoprotein Profiles and Body Composition of Competitive Male Bodybuilders at Case Western Reserve University School of Medicine and The Cleveland Clinic Foundation Department of Sports Medicine, she continued to research and publish her seminal work on male and female bodybuilders. Dr. Kleiner has continued to research and publish in the field of sports nutrition and supplements, and has also established herself through research and publications as an expert in hydration and health. Dr. Kleiner has consulted with professional teams, including the Seattle Seahawks, Supersonics, and Storm, the Cleveland Browns and Cavaliers, the Miami Heat, Olympians and elite athletes in countless sports. Dr. Kleiner is the co-founder and co-CEO of Vynna, LLC, a new evidence-based sports nutrition company by women for women. She also maintains her 22-year ownership of High Performance Nutrition, LLC, a consulting firm in Mercer Island, Washington. Dr. Kleiner is the author of seven popular books, including POWER EATING®, Fourth Edition, The Oxygen Diet Solution, The Good Mood Diet®, and The POWERFOOD Nutrition Plan. Dr. Kleiner continues to publish chapters and articles in the academic arena in sports medicine and nutrition textbooks, peer-reviewed nutrition science journals, and even the Encyclopedia Britannica. She has been featured and appeared in numerous national and international print and broadcast media. Dr. Kleiner's credentials include a PhD in Nutrition and Human Performance and an RD, FACN, CNS, FISSN certifications and honors. She is a co-founder and fellow of the International Society of Sports Nutrition and a fellow of the American College of Nutrition that honored her with a Young Investigator Award for her doctoral research. She is a member of the American College of Sports Medicine and The National Strength and Conditioning Association. Dr. Kleiner has been a member of the faculties of Duke University Medical Center, The University of North Carolina at Greensboro, Case Western Reserve University and The University of Washington. While she's not passionately promoting healthy nutrition and fitness, Dr. Kleiner stays in a good mood by spending time in the great outdoors of the Pacific Northwest with her husband and daughters. She loves skiing, playing piano and world drums, dancing, cooking, hiking, traveling, and cozying up with a good book and hot cocoa in the evening to let the intensity of the day slide away.

Topic: **Power Eating® In The Kitchen: Fast & Easy Cooking**

Paul Klinger is the Business Development Manager for LGC Limited, an international life sciences measurement and testing company. Paul joined LGC (formerly HFL Sport Science) in 2008, and manages the Informed-Choice supplement certification program in North America. Informed-Choice, a risk management quality assurance program, works closely with supplement companies, manufacturers and raw material suppliers to ensure the products they produce meet strict quality standards and are safer for athletes to use.

Topic: **Isn't Every Elite Athlete on PEDs? Oh No! It Must Be Tainted Supplements: Informed Choice/NSF/Anti-Doping Debate**

This topic is a discussion around Banned Substance Certification programs and the issues associated with supplementation.

Dr Jo® Lichten PhD RD, a PhD nutritionist and registered dietitian, has been fascinated with "energy" since she her eating disorder in her teens. Over the past two years Dr. Jo® has reviewed more than 1200 research articles to uncover what influences our energy levels. Her book, REBOOT, will be published July 2014.

Topic: **Reboot Your Energy**

People think it's normal to require caffeine to get going in the morning, feel so sleepy in the mid-afternoon that it is hard to stay awake, and Sure, it's common (38% of U.S. workers experienced fatigue in the past two weeks), but it's not normal. Dr. Jo® inspires busy people to stay energized. Her research-based presentation will cover how aspects of the way we eat, think, move and sleep can affect our energy levels – and how to REBOOT. This includes:

-RECHARGE – it's not just the hours of sleep, but the type of sleep that's important

-REFUEL – food and drink provide us with the fuel we need to survive and thrive, but what is best for energy?

-REFOCUS – some of our thoughts and beliefs can send us through the fight or flight reaction, leading ultimately to fatigue. Learn how to stop it dead in its tracks.

-RESTART – the human body is meant to move, and to be refueled and ready for the next explosion of movement.

Ryan Lowery is completing his masters degree in sports nutrition at the University of Tampa. In 2013, Ryan won the National Championship in baseball with the University of Tampa Spartans. Ryan lowery has served as the senior researcher in Dr. Jacob Wilson's lab the past four years. Ryan currently has 22 published manuscripts, 3 book chapters, and over 60 published abstracts, and serves as a reviewer for JISSN. He has received the Exercise Science Student of the Year Award, NSCA Award for Outstanding Presentation, and most recently the National AAHPERD Exercise Science Major of the Year Award. Ryan's main areas of focus are sports nutrition and supplementation.

Topic: F**at Loss Strategies For Optimizing Body Composition** *(Presented by Ryan Lowery and Dr. Jacob Wilson)*

Optimizing body composition is critical for sports performance, as well as aesthetics in sports such as bodybuilding, and figure competitions. The past several years have seen a number of unique breakthroughs in the science of fat metabolism. Of particular interest are the impact of macronutrient distribution, rate of weight change strategies, and meal frequency. The purpose of this presentation will be to provide the audience with a firm understanding of what science indicates is ideal for optimizing fat metabolism both in the competitive season and in the offseason.

William Llewellyn is a research scientist in the field of synthetic and natural ergogenic substances. He currently serves as CEO/Director of R&D for Molecular Nutrition, and also works with the Center for Public Health at Liverpool John Moores University to study and promote greater understanding of the anabolic drugs issue. Llewellyn has authored several books including ANABOLICS and the Sport Supplement Reference Guide, and is a longtime monthly columnist for Muscular Development Magazine.

Topic: **Arachidonic Acid- Role in Muscle Hypertrophy and Power**

This lecture discusses the emerging evidence concerning the role of Omega-6 arachidonic acid in muscle hypertrophy and anaerobic power, and how this might change the basic model of EFAs in sport.

Jordan Moon PhD is currently the MusclePharm Sports Science Center Research Institute Director.

Topic: **Accurately Tracking Individual Changes in Fat and Muscle Mass**

Mike T Nelson PhD has spent 18 years of his life learning how the human body works, specifically focusing on how to properly condition it to burn fat and become stronger, more flexible, and healthier. He's has a PhD in Exercise Physiology. He holds a BA in Natural Science, and an MS in Mechanical Engineering (Biomechanics). He's an adjunct professor and has been called in to share his techniques with top government agencies.

The techniques he's developed, and the results Mike gets for his clients have been featured in international magazines, in scientific publications, and on websites across the globe. Learn more about him and get a free fat loss gift at http://www.miketnelson.com

Topic: **Roundtable Discussion on Metabolic Adaptation**

Layne Norton PhD started lifting weights at the age of 15 and competed in his first bodybuilding show at the age of 19. This sparked his interest in the science of nutrition and training to improve body composition. He graduated from Eckerd College in 2004 with a BS in Biochemistry with honors. He then Layne Norton PhD started lifting weights at the age of 15 and competed in his first bodybuilding show at the age of 19. This sparked his interest in the science of nutrition and training to improve body composition. He graduated from Eckerd College in 2004 with a BS in Biochemistry with honors. He then attended the University of Illinois from 2004 to 2010 where he graduated with his PhD in Nutritional Sciences with an emphasis on muscle protein metabolism. He is the owner of BioLayne LLC, which provides nutrition & training consultations to competitive physique athletes, enthusiasts, and performance athletes. He is also a professional speaker and has spoken at a multitude of Universities as well as in Australia, the UK, and Ireland. He is also a professional drug free bodybuilder and powerlifter.

Topic: **Metabolic Adaptation: A Point-Counterpoint Discussion**

This lecture on metabolic adaptation will discuss metabolic adaptations to caloric restriction, what they mean for long term body composition, why they may explain why most diets fail, and what we can possibly do to mitigate them.

Michael Ormsbee PhD CSCS FISSN is an assistant professor in the Department of Nutrition, Food and Exercise Sciences at Florida State University. He is a faculty member at the Institute of Sport Science and Medicine, the Center for Advancing Exercise and Nutrition Research on Aging, and the Institute for Successful Longevity and serves as an Honorary Research Fellow at the University of KwaZulu-Natal in Durban, South Africa. His expertise involves the interaction of exercise training, nutrition and supplements to achieve optimal body composition, human performance, and health in both athletes and clinical populations. He now competes in triathlon and recently finished his first 70.3 Ironman.

Topic: **Resistance Training and Nutrition Strategies to Maintain Muscle Mass and Perform Optimally in Endurance Sports**

Do endurance athletes need muscular development? Is there a need to include resistance training in the training program for endurance athletes? What about the use of protein, creatine or other supplements? In this presentation you will why endurance athletes should lift weights and what nutrition strategies may improve performance and body composition . Specifically, the current state of research on the use of resistance exercise for endurance sports will be summarized and practical nutrition recommendations will be outlined.

Steven Orris MS CSCS USAW CISSN took the role of Director of Strength and Conditioning at Nova Southeastern University in 2011, and designs and implements programs for 18 intercollegiate athletic teams and over 375 student-athletes. He is officially certified through the National Strength and Conditioning Association (CSCS), the Collegiate Strength and Conditioning Coaches Association (SCCC), the National Academy of Sports Medicine (CES) and the International Society of Sports Nutrition (CISSN) and is recognized by USA Weightlifting as a Sports Performance Coach. Throughout his career, Orris has trained collegiate and professional athletes on various levels."

Topic: **Strength Training and Sports Nutrition for the College Athlete- Real World Advice**

It is well documented that optimal nutrition fuels optimal sports performance. It is no secret that quality nutrition is necessary for proper fueling and recovery from intense training. Coaches acknowledge how important pre-game meals and post-workout recovery shakes are for a successful season. Athletes have been introduced, taught, and reminded to eat 6 times a day and get enough protein to ensure they are able to build and repair muscle tissue…..but something is missing. Now that we have educated collegiate coaches and athletes about nutrition, are we sure we have provided them with the tools necessary to implement a sports nutrition program? This presentation will attempt to answer that question. Taking into consideration NCAA guidelines, scholarship budgets, bus travel, and the social life of a college student, is optimal nutrition possible in a collegiate setting?

Tony Ricci, MS FISSN serves on the Advisory Board and is a Fellow of ISSN, he is a CSCS and PES, and Head Coach of Vitargo Fight Performance Team. Tony holds black belts in multiple fight disciplines. Some of the fighters he has trained include UFC fighters Ryan LaFlare, Alp Ozkilic, Dennis Bermudez, undefeated ROC champion, Andre the Bull Harrison, 3 X World Kickboxing Champion – Irish Bobby Campbell, PFK Champion Lisa Becker, Olympian and undefeated pro boxer Lenin Castillo.

Topic: **Strength and Conditioning for the Elite MMA & Combat Athlete: What you plan to do vs. What you are forced to do.**

This lecture will highlight factors to be included in the assessment of athletes participating in fight sports. Additionally, the energy systems and biomotor abilities required in fight sports will be examined, and training protocols and strategies, such as periodization models, metabolic conditioning, bodyweight training and plyometrics, for enhancing performance will be afforded through Power Point and Video. Tony will be joined by Dr. Michael Camp and udefeated UFC Fighter, Ryan Laflare.

Mike Roberts PhD obtained his B.S. degree from Baylor University in 2003 and continued to earn his Masters degree under the tutelages of Drs. Rick Kreider and Darryn Willoughby. Dr. Roberts then went on the University of Oklahoma to obtain his PhD in 2010 with Dr. Chad Kerksick and, afterward, completed a three-year postdoctoral fellowship under Dr. Frank Booth at the University of Missouri. Mike is currently an Assistant Professor at Auburn University in the Department of Kinesiology where he directs the Molecular and Applied Sciences Laboratory. Specifically, his laboratory specializes in basic cell and animal science techniques. Mike has published nearly 50 peer-reviewed articles in journals such as J Physiol, J Appl Physiol, Am J Physiol Reg, Exp Physiol, Nutr, Metab, Nutr and Metab, and JISSN. His current research interests include: 1) (with collaborator Dr. Christopher Lockwood) various physiological effects of different whey protein forms; 2) Brain mechanisms that dictate exercise motivation; 3) Nutrients that regulate muscle hypertrophy and satiety; 4) Mechanisms that occur in response to physical inactivity.

Topic: **Molecular Updates on the Effects of Phosphatidic Acid: Muscle Physiology and Beyond**

This talk will discuss the general research performed on phosphatidic acid (PA) to date, and focus on recent in vivo data collected by Dr. Roberts's laboratory examining the efficacy of PA on skeletal muscle and hypothalamic signaling. The lecture will conclude with promising areas of PA supplementation that remain to be explored.

Juan Carlos Santana FNSCA is the director and CEO of the Institute of Human Performance (IHP) in Boca Raton Florida. IHP has been the training headquarters for athletes and non-athletes from all sports and walks of life. Santana has authored over 70 books and DVD titles, along with numerous articles, on topics involving training methodologies and human performance. Since 1996, he has presented his training system in over 20 countries, certifying personal trainers in 17 countries through IHP University. JC received his Bachelor and Masters Degree in Exercise Science from Florida Atlantic University (FAU).

Topic: **Weight Cutting Strategies for Elite Mixed Martial Arts Fighters**

Competitive combat sports have long been known for insane weight losses in order to make lower weight classes. Many deaths and hospital visits have been attributed to the debilitating effects of the starvation and dehydration methods used by combat athlete in order to cut as much as 30 pounds in 2 weeks. Certainly, maintaining a lean body is crucial for combat athletes, in order to avoid ending up at a higher weight class due to excessive body fat. However, unlike aesthetic competitors, combat athletes must compete in a physically abusive environment, at very high intensities, with the added risk of serious bodily harm if not able to respond in an appropriate manner. This high-risk environment makes the proper weight loss that much more important combat athletes. Many developments have made the diet, weight-loss and supplement industries some of the fastest growing industries worldwide. According to Forbes and the Nutritional Business Journal, $32 billion in revenue accounted for nutritional supplements alone in 2012, it is projected to double that by topping $60 billion in 2021. Likewise, Market data estimates that the total U.S. weight loss market <http://www.marketdataenterprises.com/DietMarket.htm> revenues were $61.6 billion in 2012, and $60.6 billion in 2011. The combat athlete has many supplements and eating strategies to choose from in order to make the necessary cuts in weight and make the weigh-ins. Supplements, such as Beta-alanine, vitamin D, fish-oil, multi-vitamin, whey protein, and glutamine, are some of the more popular supplements proven to assist the combat athlete in sustaining optimal health during training and weight cutting. Understanding the correct timing of specific supplements can also provide additional benefits in terms of recovery as well as improved training capacity. Finally, manipulating macro nutrients and water has also been very useful in ridding the body of excess water in preparation for a weight in.

Brad Schoenfeld, PhD, CSCS, FNSCA is internationally renowned fitness expert and widely regarded as one of the leading authorities on body composition training (muscle development and fat loss). Brad is a lecturer in the exercise science department for Lehman College and is the head of their human performance laboratory. He is the author of 10 books and has published over 40 peer-reviewed journal articles. He was the 2011 NSCA Personal Trainer of the Year. He currently serves on the Board of Directors for the NSCA and is assistant editor-in-chief for the Strength and Conditioning Journal.

Topic: **MAX Muscle: A periodized approach to hypertrophy training**

This lecture will discuss the science behind optimizing muscular hypertrophy. There will be an overview of the origins of periodization, including both linear and non-linear models, and a discussion of its applicability to hypertrophy-oriented training. The effects of manipulating intensity, sets, repetitions, and rest intervals on muscle growth will be discussed in detail, as will the roles of factors such as exercise modality, training to failure, speed of movement, and recovery. Applied anatomy factors will be detailed as they relate to maximizing muscle development. The concept of "step loading" will be introduced as a means to enhance results while minimizing the potential for overtraining. Sample routines will be offered in the context of a periodized approach to help the practitioner with perfecting program design.

Erica W. Stump Esq started her career as an intellectual property attorney in Miami, Florida and then went in house as General Counsel at VPX/Redline and then Bodybuilding.com. She also taught trademark law at the University of Miami School of Law. She now has her own form. Her experience includes management and prosecution of US and international trademarks and patents, FDA/FTC compliance, business and intellectual property litigation (patent, trademark, trade dress, copyright, false advertising, non competes, and counterfeiting).

Topic: **How Do You Know When a Food or Supplement Company is Lying to You? Claims vs Puffery.** Is this claim puffery? Does the claim need substantiation? Many companies in our industry make many claims, some so outlandish that they are not believable, which makes them "puffery" and non actionable. Some claims, on the other hand, are not puffery and need credible scientific substantiation. The latter that lack substantiation can get supplement companies in trouble with the FDA, FTC, competitors for false advertising, and class action attorneys and plaintiffs. How can you tell the difference between the two? Come and find out!

Mark Tarnopolsky MD, PhD, FRDP(C), is the Clinical and Research Director of the Corkins/Lammert Family Neuromuscular and Neurometabolic Clinic at McMaster University. He holds an endowed chair at McMaster Children's Hospital and Hamilton Health Sciences Foundation in Neuromuscular Diseases and is a Professor of Pediatrics and Medicine. He completed a PhD in cell biology and metabolism and residency training in Neurology and Physiatry. He is also a fellow of the American Academy of Electrodiagnostic Medicine. He has received the Dr. David Green Award from the Muscular Dystrophy Association in 2005. He received the Barsky Lectureship for Excellence in Mitochondrial Medicine in 2007 and the Sutton Lecture and the Honor Award for the Canadian Society for Exercise Physiology in 2005 and 2008, respectively and the McMaster Distinguished Alumni Award for Science in 2012. His research focuses on nutritional, exercise and pharmacological therapies for neurometabolic (primarily mitochondrial) and neuromuscular disorders, and aging. In addition, he studies the physiological and molecular aspects of mitochondrial adaptation to exercise, aging and the metabolic syndrome. He has authored or coauthored more than 350 scientific articles. He has also lectured widely on neurology (neuromuscular and neurometabolic disorders), aging, nutrition and exercise physiology. He was on the United Mitochondrial Disease Foundation Scientific and Medical Advisory Board (2009-2013) and is on the editorial board of the Clinical Journal of Neuromuscular Disorders and Mitochondrion and was an Associate Editor for Medicine and Science in Sports and Exercise (2009-2013). He has been on Grant Selection Committees for NSERC (Animal Biology, 2003-2006, Chair, 2006), CIHR Biology of Aging Committee (2006), CIHR Movement Committee (2012-2013), and Chair of the Emerging Team Grant: Mobility in Aging (2007). His wife, Dr. Jacqueline Bourgeois is a pathologist and collaborates with his team on histology projects and he has three daughters (Stephanie, 30 y, physiatrist; Alanna, 27 y, Crown attorney; and Milla, 14 y, grade 8). He has raced nationally and internationally in adventure racing (2000 – 2005), represented Canada at the World Championships in Winter Triathlon (2006) and in Ski-Orienteering (1995) and at the 2012 World cup ski-orienteering races and won the Ontario Trail running series in 2004, 2005, 2006. Mark has volunteered as a soccer coach, organizing orienteering and ski races and has been a head coach for Adventure Running Kids for the past 4 years.

John Travis (NSF) is a Senior Research Scientist with NSF International, joining their team in 1995. John graduated from the University of Michigan Chemistry program. He specializes in the analysis of Dietary Supplements, utilizing techniques ranging from gas chromatography to high-performance liquid chromatography to mass spectrometry. His expertise in trace contaminant analysis was instrumental in the development of the screening methods for NSF International's "Certified for Sport" program. As such, he is currently involved with the analysis of pharmaceutical agents and illicit drugs, stimulants and other banned substances as both adulterants and contaminants in Dietary Supplements.

Krista Varady PhD is an Associate Professor of Nutrition at the University of Illinois, Chicago. Her research focuses on the efficacy of alternate day fasting for weight loss and cardio-protection in obese adults. Her work is funded by the NIH, American Heart Association, International Life Sciences Institute, and Isagenix LLC. She has published over 25 publications on this topic, and is also the author of a book for the general public, entitled the "Every Other Day Diet".

Topic: **Alternate Day Fasting: Effects on Health and Body Composition**

The ability of modified alternate day fasting (ADF) (i.e. consuming 25% of energy needs on the fast day, and ad libitum fed on feed day) to facilitate weight loss and lower vascular disease risk in obese individuals remains unknown. This study examined the effects of ADF, administered under controlled versus self-implemented conditions, on body weight and coronary heart disease (CHD) risk indicators in obese adults. Sixteen obese subjects (12 women/4 men) completed a 10-week trial, consisting of 3 phases: 1) 2-week control phase, 2) 4-week weight loss/ADF controlled feeding phase, and 3) 4-week weight loss/ADF self-selected feeding phase. Dietary adherence remained high throughout the controlled feeding phase (86% days adherent), and the self-selected feeding phase (89% days adherent). Rate of weight loss remained constant during controlled feeding (0.67 ± 0.1 kg/week) and self-selected feeding phases (0.68 ± 0.1 kg/week). Body weight decreased ($P < 0.001$) by 5.6 ± 1.0 kg (5.8% ± 1.1%) after 8 weeks of diet. Total cholesterol, LDL cholesterol, and triacylglycerol concentrations were lowered ($P < 0.01$) by 21 ± 4%, 25 ± 10%, 32 ± 6%, respectively, after 8 weeks of ADF, while HDL cholesterol remained unchanged. Systolic blood pressure decreased ($P < 0.05$) from 124 ± 5 mm Hg to 116 ± 3 mm Hg. These findings suggest that ADF is a viable diet option to help obese individuals lose weight and decrease CHD risk.

Jeff Volek PhD RD leads a research team that explores the physiologic impact of various dietary and exercise regimens and nutritional supplements. His most significant line of work has been a series of studies aimed at better understanding the impact of ketogenic diets on obesity, body composition, fatty acid composition and lipoprotein metabolism, adaptations to training and overall metabolic health. He has published more than 260 peer-reviewed manuscripts, many of which were longitudinal interventions of carbohydrate restricted diets.

Topic: **The Many Facets of Keto-Adaptations- Health, Performance, and Beyond**

Obesity is a condition of excess fat accumulation in adipocytes where the person is literally stuck in storage mode diverting a disproportionate amount of calories into fat cells as opposed to oxidation. Thus it is more productive to think of obesity as a problem in 'energy flow' rather than energy expenditure (i.e., calories in, calories out). The most efficient approach to accelerate the body's ability to access and burn body fat is to restrict dietary carbohydrate while increasing fat intake for a period of several weeks, after which fatty acids and ketones become the primary fuel at rest and during submaximal exercise. The coordinated set of metabolic adaptations that ensure proper inter-organ fuel supply in the face of low carbohydrate availability is referred to as keto-adaptation. This unique metabolic state has recently been shown to have widespread and profound therapeutic and performance-enhancing effects ranging from reversing type 2 diabetes to shrinking tumors to allowing ultra-endurance runners to set course records. This presentation will discuss the physiologic effects of very low carbohydrate diets with an emphasis on their unique effects on both features of metabolic syndrome and human performance.

Shawn Wells, MPH, RD, CISSN has a unique blend of knowledge in the field of performance nutrition and supplementation. Mr. Wells attended UNC-Chapel Hill, earning a Master's degree in Nutrition and minor in Exercise Science. His education along with credentials of Registered Dietitian and Certified Sport Nutritionist (CISSN), distinguished him as an expert in sports nutrition. Mr. Wells has held the role of Chief Clinical Dietitian with over a decade in acute and skilled nursing care, grounding his ethics and practice of patient focused care. Fulfilling the position of CEO of Zone Halo Research, a consulting group for supplement formulations, he gained significant notoriety in the industry. As an accomplished author, formulator and clinician, in 2011, Shawn took his experience and passion to become Director of R&D at Dymatize Nutrition. Dymatize Nutrition, now owned by Post, has cemented its role the global leader in finished product research and innovation with over 200 products in more than 50 countries. Shawn was recently acquired by the top non-GMO & natural dietary supplement company in the industry, BioTRUST Nutrition, as their Vice President of Research and Development. Mr. Wells travels the globe looking for the next great ingredient, doing research, and assembling innovative formulations with experience in every channel of distribution/sales.

Topic: **Leucine, HMB, and amino acid metabolites support muscle growth and athletic performance** *(Presented by Shawn Wells and Gabriel Wilson)*

The amino acid leucine is known to support muscle anabolism, and is a key determinant of muscle protein health and athletic performance. Interestingly, it appears that the metabolites of leucine, HMB, KIC, and HICA have anabolic properties as well. HMB is particularly well studied, and has been shown to improve protein balance, and favorably alter body composition and athletic performance. Moreover, recent development of an HMB "free acid" may augment the efficacy of this supplement

Darryn Willoughby PhD FISSN holds B.S. and M.S. degrees in Exercise Science from Tarleton State University and a Ph.D. in Neuromuscular Physiology and Biochemistry with sub-emphases in Nutritional Biochemistry and Molecular Biology from Texas A&M University. He is a Fellow of the American College of Sports Medicine, International Society of Sport Nutrition, and American College of Nutrition. He is a Certified Strength and Conditioning Specialist through the National Strength and Conditioning Association, and a Certified Sports Nutritionist through the ISSN. He is also a Past-President of the ISSN. Dr. Willoughby is presently an Associate Professor of Exercise and Nutritional Biochemistry and Molecular Physiology at Baylor University in Waco, TX.

Topic: **Ursolic Acid Supplementation: A Comparison with Leucine in mTORC1 Up-regulation**

Resistance exercise stimulates skeletal muscle protein synthesis (MPS) during post-exercise recovery due to the up-regulation of the mammalian target of rapamycin (mTOR) signaling pathway. The branched-chain amino acid, leucine, which is available in nutrient supplements serves as a substrate for MPS, stimulates insulin release, and largely independent of insulin, directly activates the mTOR signaling pathway in an Akt-independent manner. Recent research has discovered a natural compound, ursolic acid (UA) which also appears to stimulate muscle protein synthesis by activating the mTOR signaling pathway, just as with the amino acid, leucine. UA is a natural pentacyclic triterpenoid carboxylic acid that is a major compound found in apple skin and other fruits such as cranberries. It is thought that UA is an inhibitor of muscle atrophy, and that muscle hypertrophy can occur by daily UA consumption due to its apparent ability to increase the activity of mTOR signaling. Because leucine is insulinotropic, it can stimulate mTOR signaling in an Akt-depent manner via insulin receptor activation. However, leucine can also stimulate mTOR directly via activation of the mTORC1 complex. The manner in which UA activates mTOR signaling is not well known, and since UA is already available as an alleged nutritional supplement, it should continue to be investigated further in order to fully understand its effectiveness at increasing MPS and muscle hypertrophy is response to resistance training. Therefore, this presentation will discuss the ability of UA to up-regulate mTOR signaling and MPS in comparison to leucine.

Dr. Gabriel Wilson, Ph.D., CSCS, finished a Post Doctorate in the Department of Biochemistry and Molecular Biology, at Indiana University School of Medicine. Dr. Wilson's expertise is researching optimal protein requirements for muscle growth. Dr. Wilson is currently an Applied Athletic Researcher and Nutrition Coach for IMG Academies working with top-level professional athletes. Dr. Gabriel Wilson is an accomplished speaker, author and consultant for sports nutrition and specifically muscle protein synthesis.

Topic: **Leucine, HMB, and amino acid metabolites support muscle growth and athletic performance**

Dr. Jacob Wilson, Ph.D., CSCS*D is an assistant professor and runs the strength & sports nutrition laboratory at the University of Tampa. Dr. Wilson's research has covered the cellular, molecular, and whole body changes in muscle size, strength, and power in response to resistance training and nutritional supplementation interventions. On these topics he has published over 100 peer-reviewed papers, book chapters and abstracts. He has recently established a new graduate program at University of Tampa dedicated to Sports Nutrition and has previously been awarded the NSCA's Terry J. Housh young investigator of the year award.
Topic: **Fat Loss Strategies For Optimizing Body Composition**

Tim Ziegenfuss PhD FISSN is a renowned sports nutrition and exercise physiologist with graduate degrees from Purdue and Kent State University. He is a Past President and Fellow of The International Society of Sports Nutrition and CEO/Co-founder of The Center for Applied Health Sciences. Dr. Z has contributed to more than 600 articles in mainstream magazines, 38 scientific papers, and 8 text book chapters, and has numerous interviews/appearances in top 25 national print/radio media.
Topic: **A Novel Hydrolyzed Chicken Sternal Cartilage Extract on Connective Tissue Protection and Functional Recovery from Exercise in Healthy Adults: A Pilot Study.** Dr. Ziegenfuss' presentation will provide an overview of the nutritional implications for joint health and connective tissue recovery. In particular, he will discuss results from a new clinical study in physically active healthy subjects on BioCell Collagen® that provides intriguing new data suggesting that this patented, scientifically substantiated dietary supplement has promising new applications in sports nutrition.


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