



# Center For Advanced Fetal Care Newsletter

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## The Complexity of Simplicity...

...In creation. In education. In imagination. It seems the more knowledge we amass and the more experience we gain, the more we realize how **complex** it is to attain simplicity... We simplify our ailments and blame "genes", yet the more we delve into genetics, the more complex our lives become. This is evident in the rising "**screening panels**" that are now available, and our inability to reassure our patients to matters of "variants of unknown significance". We are enslaved by technology to such an extent that we manage to overlook our simplest, most creative old standards, the "**bookbook™**", that have been there all along. We are obsessed with the human brain, the penultimate of complexity, trying to comprehend it, yet we pour our energy into attempting to simplify it by sending **brain waves by e-mail!** And how perfectly did Miró describe it when he stated: "That is why a line, a color, is all that is needed to create a painting"...



Solar Bird by Joan Miró 1968

Which brings us to this issue, our 20th issue of the **CFAFC Newsletter**, which we have dedicated to the complexity of simplicity. We bring you highlights from the 24th World Congress of **ISUOG**, a society with the simplest, yet most complex vision: ensuring that every woman has access to ultrasound performed by a competent provider in order to impact diagnosis and outcomes. We alert you to the upcoming **AIUM/WFUMB Convention** which shall unite the global sonographic community addressing the tremendous role of ultrasound in all aspects of medical care. We recommend to you the newest open-access **eBook**, just released by Professor Abuhamad, which presents a most comprehensive approach to sonography in Ob/Gyn in such a complete and simple format. We present to you the critical work of **Bromley et al** on the importance of being mindful to the simplest most basic yet critical aspect of scanning in the first trimester: fetal safety, in addition to our usual quarterly features. We hope to **simplify** our complex existence by highlighting matters which deserve our focus and attention, matters that are the most likely to positively impact our clinical practice and the care that we provide to our patients...

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## Biosafety and Nuchal Translucency Measurement

With the wealth of publications addressing the widespread utilization of ultrasound in the first trimester, not only for NT assessment, but for also for a full anatomical survey, an area that has not been properly addressed is adherence to biosafety recommendations and the ALARA principle. This is where the tremendous value of Bromley et al's latest study published in the **Journal of Ultrasound in Medicine** comes in. As part of the NTQR Program, the authors retrospectively reviewed 5 images submitted by each of 100 consecutive practitioners for the output display standard where the thermal index type, bone (Tlb) or soft tissue (TIs), and value were recorded. The authors found that the output display was present in at least 1 image of 77% of the practitioners'. Of those, 19.5% used Tlb exclusively, 48.1% used TIs exclusively and the rest utilized a combination of both. In only 5% of providers was the Tlb lower than 0.5 for all submitted images, in 6% lower than 0.7 and in 12% lower than 1. In addition, 19.5% of provides used a Tlb or TIs higher than the recommended 1.0. The authors conclude that clinicians are not demonstrating compliance, irrespective of their background, and stress the importance of compliance for the safety of the future generation.

Do Clinical Practitioners Seeking  
Credentialing for Nuchal Translucency  
Measurement Demonstrate Compliance  
With Biosafety Recommendations?  
Experience of the Nuchal Translucency Quality Review Program

From Bromley MB, Jan Spitz, MPH, BSMS, Kara Fuchs, MD, Emadi L, Chhabing, MD

## NIPT Versus the Combined Test in Screening for Trisomies

Queszada et al's recent study in **Ultrasound in Obstetrics and Gynecology** compares the performance of cfDNA testing in the general population at 10-11 weeks to the performance of the traditional combined test at 11-13 weeks. In this prospective study, 2905 singleton pregnancies first underwent cfDNA testing at 10-11 weeks and then they underwent the combined test, using NT with serum biochemistry (PAPP-A and free BHCG), at 11-13 weeks. Results of cfDNA were available on 98.1% of cases and they were ready within 2 weeks from the time of the blood draw. The trisomic state of the pregnancies was available on all. cfDNA correctly identified all 31 fetuses with trisomy 21, 90% of fetuses with trisomy 18 and 40% of fetuses with trisomy 13, with false positive rates of 0.04%, 0.19% and 0.07% respectively. The fetal fraction was lower in cases with discordant results. Using the combined test, the risk for trisomy 21 was  $\geq 1/100$  in all trisomic fetuses at a false positive rate of 4.4%. The authors conclude that for trisomy 21 and 18 the performance of cfDNA in the general population is similar to that in the high risk population. In addition, false positive and false negative results could potentially be avoided if the combined test's a priori risk is taken into account when interpreting the cfDNA results.

Screening for trisomies 21, 18 and 13 utilizing cfDNA analysis of maternal blood at 10-11 weeks' gestation and the combined test at 11-13 weeks  
Maria Subtotal Quesada, Maria del Mar Gil, Carla Francisco, Georg Ochoa, Kyoona H. Heon, et al.  
From: Birthright Research Centre for Fetal Medicine, King's College, London, UK

## Highlights from the 24th World Congress of the International Society of Ultrasound in Obstetrics & Gynecology Held in Barcelona, Spain Sept 14-17, 2014

Outdoing itself, yet another time, **ISUOG** broke all record's with its **24th World Congress** recently held in Barcelona in September. The congress was attended by almost 3000 delegates representing 94 countries who actively participated in numerous didactic and hands-on sessions in addition to various workshops, keynote lectures, and the newly introduced masterclasses sessions.

The packed pre-congress courses were outstanding covering fetal echocardiography, updates in prenatal diagnosis and ultrasound in the assessment of gynecological cancer. And perhaps an imprinted image, forever in the minds of the delegates, is of the auditorium with all 3000 delegates in time for Professor Nicolaidese's keynote lecture...

Spread throughout the program, there were various engaging workshops on urogynecology, infertility, endometriosis, simulation, borderline cardiac findings, late-onset placental disease, fetoscopic surgery, brain evaluation and the ISUOG Outreach Program, among many others.

As usual, cutting edge research was presented by leading brilliant minds. And clearly, the pioneering work of C. Votino from Belgium, for which she won 2 best oral communications, stands out: the first on imaging the fetus at 8-10 weeks, and the second on minimally invasive fetal autopsy using ultrasound.

Lebanon was well represented with 2 posters, 1 oral communication and 1 presentation, the result of collaborative work of I. Aboujaoude, R. Abu-Rustum, S. Hamamah, D. Haouzy and N. Helou.

ISUOG further strengthened its outreach by introducing the **ISUOG Ambassador Program** at the congress made up of 16 Ambassadors from all over the globe hoping to intensify ISUOG's presence and commitment to ultrasound education in under represented regions of the world...

The full convention can be viewed using ISUOG's **On Demand** portal where all posters and presentations have been uploaded and are available to 2015 ISUOG members. Non-members can view a selection of **ISUOG's Award Winning Presentations** which are open access. Mark your calendars for **ISUOG's 25th Congress** and celebration planned in Montreal 11-14 October 2015.



Gaudi's Enchanting Barcelona



The Brilliant Carmela Votino, MD

## Highlights from the 11th Congress of the Mediterranean Association for Ultrasound in Obstetrics & Gynecology Held October 9-12 in Antalya, Turkey

It was to beautiful Antalya that over 293 delegates flocked to attend the **11th Annual Congress of MEDUOG** (the Mediterranean Association for Ultrasound in Obstetrics & Gynecology) held October 9-12 in Turkey. The delegates and speakers came from all over the Mediterranean region, from eleven countries, including Albania, Croatia, England, France, Greece, Italy, Lebanon, Serbia, Spain, Tunisia and Turkey and they enjoyed the beautiful weather and gracious hospitality...

The program was rich and varied with comprehensive lectures on various topics related to ultrasound in the first trimester, fetal anomalies, twin pregnancy, pelvic floor, Doppler in gynecology as well as live-scan demonstrations using the latest sonographic machines. The opening ceremony included keynote presentations addressing two important topics: the future of perinatal imaging presented by A. Kurjak from Croatia, and screening of chromosomal abnormalities in the first trimester presented by C. Sen from Turkey. G. Haddad from France presented the latest modality for screening for NTD in the first trimester using the BPD/TAD ratio. In addition, there was a stimulating detailed session on twins addressing such key topics as methods of screening, the role of ultrasound, key complications relating to TTTS and means of predicting outcome presented by G. Monni from Italy, A. Khalil from the United Kingdom and K. Dimassi from Tunis. In addition, Lebanon was well represented with two talks given by A. Adra and R. Abu-Rustum. Building on the success of the 11th Congress, plans are underway for the 12th Congress of MEDUOG which is to be held in Athens, Greece in collaboration with **Euroson** on November 6-8, 2015. More updates to follow in future issues of the **CFAFC Newsletter**.



## Highlights from the 4th Fetal Echocardiography Symposium at UCLA Held in Los Angeles, California October 18, 2014. By Mark Sklansky, MD

The **Fourth Annual Fetal Echocardiography Symposium** at UCLA was held on October 18, 2014 in the Tamkin Auditorium of the Ronald Reagan **UCLA Medical Center** in Los Angeles, California. With over 200 people in attendance, this year's symposium was a phenomenal success, the best yet of this series of annual day-long symposia on fetal echocardiography.

As in prior years, the symposium provided an intensive series of clinically-oriented presentations replete with invaluable tips and pearls for imaging the fetal heart. Following several presentations on normal anatomy and basics of how to optimize the image, focused talks on evaluation of specific cardiac lesions of the four-chamber view, outflow tracts and three-vessel view were presented, as well as advanced talks on quantitative cardiac evaluation, cardiomyopathy, and first trimester imaging. In addition, live-scanning sessions by G. DeVore, MD and M. Sklansky, MD demonstrated many of the concepts discussed during the day, as well as real-time 3D/4D scanning. Just before lunch, a special session with testimonials by families with children with congenital heart disease emphasized the importance of prenatal detection.

In addition to an exceptional series of didactic presentations and live-scanning sessions, the symposium offered a full array of exhibitors showcasing the latest in ultrasound technology. The symposium also offered an outstanding opportunity to fellows and other trainees to network and meet with prospective employers, as well as an opportunity for everyone to catch up with colleagues and meet new friends.

Dates for next year's symposium will be announced in the near future; please contact Dr. Mark Sklansky for further information at [mksklansky@mednet.ucla.edu](mailto:mksklansky@mednet.ucla.edu).



The Delegates in the Auditorium



Attendees with Mark Sklansky, MD

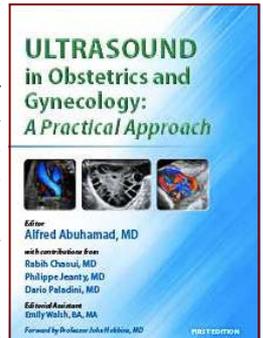
## CFAFC Recommends “Ultrasound in Obstetrics & Gynecology: A Practical Approach”

Another outstanding reference from a world-renowned educator, Alfred Abuhamad, MD, has recently been released at the **24th World Congress of ISUOG** as an **ISUOG Outreach eBook**, free and open access to all.

The first edition of “**Ultrasound in Obstetrics and Gynecology: A Practical Approach**” was put together by Professor Abuhamad together with his distinguished contributors: Professors Chaoui, Jeanty and Paladini. It contains 15 chapters covering every imaginable aspect of scanning: from the basic physical principles, to the equipment, to the technical aspects of the ultrasound examination. It provides an in depth description of the components of the examination in each of the three trimesters, in multiple gestations, and it covers placental and amniotic fluid abnormalities. The basic 6-step approach to scanning, used in ISUOG Outreach training, is covered as well. In addition, ectopic pregnancies and gynecological evaluations are beautifully presented. The final chapter addresses writing the obstetrical report. The eBook is currently available in English, however various translations are underway and will post soon.

Flipping through the pages, the reader is greeted by a unique approach in which the most complex topics are presented in the simplest of manners. There are stunning images, illustrating both normal as well as abnormal cases, with embedded YouTube video clips illustrating all the key points.

Though this text was put together for training purposes in general, and for the outreach setting in particular, it will undoubtedly become an invaluable tool for all who are involved in Ob/Gyn sonography: trainers, trainees and clinicians irrespective of their degrees and level of skill. CFAFC highly recommends this compilation of over 2 decades of experience which is elegantly summarized in the most user-friendly format.



## THIS AND THAT

### Upcoming SMFM

The annual **Pregnancy Meeting** of the **SMFM** will be held in San Diego, California February 2-7, 2015. There will be comprehensive pre-congress courses on obstetrical controversies, sonography for the MFM, placenta accrete, critical care, genetics for the MFM among many others. In addition, the late-breaking research is session planned for Friday 6 February 2015. Details and registration information is available at **SMFM**.

### Upcoming AIUM/WFUMB

The **AIUM** is planning its annual convention hosting **WFUMB** in Orlando March 21-25, 2015. An exceptional convention is planned with multilingual sessions planned in French, Spanish in addition to English. There will be an international audience from around the globe enabling the unique exchange of ideas, techniques and practices. Further details and registration information is available at the **AIUM website**.

### ISUOG's APP

**ISUOG** has launched its **UOG App** providing access to UOG's articles on iPhones and iPads. The **UOG** contents on the App are available to **ISUOG members** who have access to the journal. In addition, non-ISUOG members may use the App to access all of UOG's free content. The APP sends notifications of the latest issues, enables saving favorite articles, and facilitates sharing articles among colleagues.

### Announcing the Recent AUBMC/RCOG Collaboration

**CFAFC** is proud to announce the recent collaboration between the **AUBMC Dept. of Ob/Gyn** and the **RCOG** where AUBMC has become a designated center for the MRCOG exam. As part of this collaboration, a preparatory course will be held at AUBMC in the near future to facilitate the preparation of regional delegates as well as “teach the teachers” for taking part 1 of the MRCOG exam. For more details, visit the **AUBMC Website**.

### CFAFC News

Reem S. Abu-Rustum had an opinion “**NIPT: a Matter of Critical Timing**” in **Prenatal Perspectives**. She participated in the **ISUOG Outreach** Workshop at the **24th World Congress of ISUOG** where she presented **SANA**. She is honored to have been appointed an **ISUOG Ambassador** and a member of the **ISUOG Outreach Committee**. She also served as a moderator, invited speaker and live-scan demonstrator at the **11th Congress of MEDUOG** where she was appointed MEDUOG's General Secretary for a 2 year term.

### Hot-Off-The-Press. Prepared by Abdallah Adra, MD

#### Diagnostic accuracy of routine antenatal determination of fetal RHD status across gestation: population based cohort study

OPEN ACCESS

Lyn S Chitty *professor*<sup>1</sup>, Kirstin Finning *clinical scientist*<sup>2</sup>, Angela Wade *senior lecturer*<sup>3</sup>, Peter Soothill *professor*<sup>4</sup>, Bill Martin *consultant obstetrician*<sup>5</sup>, Kerry Oxenford *research midwife*<sup>6</sup>, Geoff Daniels *consultant clinical scientist*<sup>2</sup>, Edwin Massey *associate medical director*<sup>2</sup>

Routine antenatal prophylaxis with anti-RhD immunoglobulin in the third trimester for all RhD negative pregnant women is standard of care in many countries, regardless of the rhesus status of the baby.

Researchers from UCL Institute of Child Health in London assessed the accuracy of fetal RhD genotyping using cell-free fetal DNA in maternal plasma at different gestational ages in a prospective multicenter cohort study in seven maternity units in England. The study was published in the **British Medical Journal**.

Participants included RhD negative pregnant women who booked for antenatal care before 24 weeks' gestation. Blood was taken at the time of booking and, when possible, at other routine visits, and in the third trimester, when blood was taken for the routine antibody check. The results of cord blood analysis were also obtained to confirm the fetal RhD genotyping.

Up to four analyses per woman were performed in 2288 women, generating 4913 assessable fetal results. Sensitivity for detection of fetal RhD positivity was 96.85%, 99.83%, 99.67%, 99.82%, and 100% at < 11, 11-13, 14-17, 18-23, and > 23 completed weeks' gestation, respectively. Before 11 weeks' gestation, 16/865 (1.85%) babies tested were falsely predicted as RhD negative.

The authors concluded that mass throughput fetal RhD genotyping is sufficiently accurate for the prediction of RhD type if it is performed from 11 weeks' gestation.



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**"For me to gain freedom  
is to gain simplicity".  
Joan Miró**

For any interesting case reports, comments, suggestions or announcements to be included in our newsletter, please send an e-mail to [rar@cfafc.org](mailto:rar@cfafc.org).

## Prenatal Diagnosis of Fetal Goiter at 21 Weeks. Case by Mazen Hatem, MD

A 26 year old nullipara was referred at 21 weeks for a detailed scan. The fetal growth, amniotic fluid index as well as the anatomical survey were normal. However, there was an enlarged mass in the fetal neck consistent with an enlarged thyroid (Figures 1-4).

Fetal thyroid goiter was suspected and a maternal serum thyroid panel was ordered. It was positive for thyroglobulin antibodies. As such, maternal administration of thyroxine 50 mg daily and prednisone 5 mg daily was started. However, the patient was noncompliant. She went on to deliver a term female, 3400 grams, with hypothyroidism who is currently on treatment.

In her second pregnancy, the patient was again non-compliant, and her fetus was found to have a goiter at 20 weeks. She proceeded with a termination of pregnancy elsewhere. However, in her third pregnancy, the patient was compliant with both thyroxine and prednisone. She had an uneventful pregnancy resulting in a healthy unaffected term male weighing 3350 grams.

Fetal goiter is a rare condition with an incidence of 1/4000 live births. It is more commonly due to underlying hypo- and not hyper-thyroidism. It is more commonly diagnosed in the neonate than in the fetus. The most common fetal presentation is of a homogenous symmetrical mass in the region of the thyroid which is extremely uncommon to diagnose prior to 24 weeks. Fetuses should be closely monitored at 2 week intervals for growth, signs of hydrops, polyhydramnios and because of concern of in utero demise. In addition, affected fetuses should be delivered at an equipped center because of concern of tracheal compression.

In cases of hypothyroidism, and since thyroxine does not cross the placenta, amnio-infusion of levothyroxine has been used. However in this case, and due to the inability to offer intra-amniotic therapy, oral therapy, which has been shown to benefit women with thyroid antibodies and recurrent abortions, was utilized with a favorable outcome. As such, it may be worthwhile to conduct large prospective studies to further evaluate the benefits of such therapy.

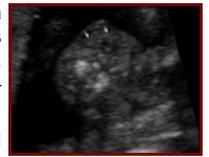


Figure 1



Figure 2



Figure 3



Figure 4

## Upcoming Congresses

COURSE TITLE	DATES	LOCATION	WEBSITE ADDRESS
Annual Congress of the Lebanese Society of Ob/Gyn	Nov 13 - 15, 2014	Beirut, Lebanon	<a href="http://www.lsog.org.lb">www.lsog.org.lb</a>
International Society for Twin Studies	Nov 16 - 19, 2014	Budapest, Hungary	<a href="http://www.etchouches.com/ehome/77754">www.etchouches.com/ehome/77754</a>
17th Annual Mid-Atlantic Symposium on Ultrasound in Ob/Gyn	Nov 20 - 21, 2014	Virginia Beach, VA	<a href="http://www.evms.edu/education/cme/17th_annual_mid-atlantic_ultrasound_symposium/">www.evms.edu/education/cme/17th_annual_mid-atlantic_ultrasound_symposium/</a>
World Symposium of Perinatal Medicine	Nov 20 - 22, 2014	San Diego, CA	<a href="http://www.worldsymposium.net/2014topics">www.worldsymposium.net/2014topics</a>
23rd Annual Ob/Gyn Ultrasound Update for Clinical Practice	Dec 4 - 7, 2014	Fort Lauderdale, FL	<a href="http://www.cmebyplaza.com/Registrants/GoHo14/About.aspx">www.cmebyplaza.com/Registrants/GoHo14/About.aspx</a>
FMF Advances Course	Dec 6 - 7, 2014	London, UK	<a href="http://www.fetalmedicine.org/fmf-advances-course">www.fetalmedicine.org/fmf-advances-course</a>
35th Annual Pregnancy Meeting of SMFM	Feb 2 - 7, 2015	San Diego, CA	<a href="http://www.smfm.org/the-pregnancy-meeting">www.smfm.org/the-pregnancy-meeting</a>
37th Annual Advanced Ultrasound Seminar: Ob/Gyn	Feb 19 - 21, 2015	Orlando, FL	<a href="http://www.aium.org/cme/events/sem2015/sem2015.aspx">www.aium.org/cme/events/sem2015/sem2015.aspx</a>
Annual Convention of AIUM Hosting WFUMB	March 21 - 25, 2015	Orlando, FL	<a href="http://www.aium.org/annualConvention">www.aium.org/annualConvention</a>
6th Annual Fetal Cardiology Symposium	April 14 - 18, 2015	Phoenix, AZ	<a href="http://www.fetalcardio.com">www.fetalcardio.com</a>