

# Preface

The 2nd World Conference entitled 'Hormonal and Genetic Basis of Sexual Differentiation' was held in Miami on January 15, 2010, and was directed by Maria I. New and Joe Leigh Simpson.

The success of the conference was helped in part by the endorsement of the Endocrine Society and was jointly sponsored by the University of Miami Miller School of Medicine.

The history of this meeting dates back to 2004 when Dr. Maria New organized the 1st world conference in Arizona. The conference brought together world experts in the field of disorders of sexual differentiation and allowed them to share their vast amounts of knowledge and cutting-edge research with each other. It was also a way to bring these scientists to a single room where ideas and theories could be discussed as well as new collaborations. The conference was a great success and could be seen in the literature by the surge of peer-reviewed papers and collaborations around the world. Even though disorders of sexual differentiation have been noted throughout history, dating over 2,000 years, little was known and discoveries were waiting to happen. Dr. New would have loved to have the meeting on an annual basis but was unable to until now.

Thanks in part to the 2004 meeting, significant advances have been made in the biological, genetic, and psychological differences between a man and a woman. Also, in recent years, great controversy has risen in the mainstream media dealing with elite athletes and their desires to engage in sports. Who should be playing on the 'boys' team versus who should be playing on the girls team? This question has stimulated interest in the definition of sexual identity in the elite athlete and has gone as far as to question gender. This includes questions such as can an XY female compete as a female? Guidelines put out by different athletic boards vary and the lack of a general consensus of what should be done has sparked great anger and suspicion for some athletes. Accusations follow which can be very embarrassing on a local and in some cases an international level.

The 2nd World Conference sought out the best scientist in the field of sexual differentiation both academic and clinical. It opened a new platform where surgeons, obstetricians, psychiatrists, endocrinologists, and pediatricians were able to have creative discussions and learn about the influences they have on each other. The platform that was created allowed for a purposefully interactive environment in which

new discoveries and outstanding science over the past 6 years were discussed. The conference specifically addressed the controversy concerning biological (gonadal and anatomical) differences between a man and a woman. Those presenting at the conference were world class scientists who achieved high recognition for their work over the years on the biological, genetic, and psychological differences between the sexes. They covered recent advances which could be used to clarify confusions and to address controversies among athletes like the South African track star at the International Amateur Athletic Federation meet in Berlin in August 2009. Her eligibility to compete as a female athlete brought her international media attention and embarrassment as to what gender is she. The conference presented an extraordinary amount of data that can help avoid such international attention. The conference taught ways to evaluate, diagnose, and treat those with disorders of sexual differentiation to clinicians who normally do not see these types of patients, may have them in their practice unknowingly, or see them on a regular basis without knowing what to do next. Also, knowing the great importance of modalities such as hormonal assays and psychological tests used along with DNA analysis.

The large scale of the meeting became greatly apparent when the International Olympic Committee (IOC) not only expressed that they would like to be present at the meeting but also desired to sit with the experts at the meeting and discuss future testing regulations that would help avoid attention such as that seen by the South African runner. A roundtable discussion was further organized by Dr. New so that the experts, with their vast knowledge of gender issues, could advise the IOC as well as the IAFF (International Association of Athletics Federation) on how to determine an athlete's eligibility by using better testing modalities as well as clearer definitions of what it means to be a male as well as a female. It was also important to express that there are times where a situation will shift from being a sporting issue to a medical issue. The IOC, 10 years ago, had abolished mandatory gender testing but with recent attacks on athletes questioning their gender in a very public manner, it has become apparent that a review of current guidelines and the need for the development of new guidelines are needed. The roundtable discussion encompassed both the science and the ethics of this dilemma and helped clarify the medical aspect of these issues.

The scope of the meeting went well beyond just the science behind many of these disorders; it also dealt with many issues that are beneficial to the practitioner. Sex determination in newborns born with genital ambiguity can be found dating back more than 2,000 years (ANCIENT HIST OF CAH). It can be found in the art and writings throughout time and across many cultures. But, even though it has been dealt with in all societies for over a millennium, an accurate and effective way to quickly diagnose and assign gender to these newborns is still under investigation. The meeting took great care in this issue and we hope that with the open discussions during the meeting as well as that which was presented will help the medical practitioners worldwide to not only help diagnose and treat newborns but also help those who were misdiagnosed or left undiagnosed at birth and present later in life with questions or confusion about changes in their bodies (i.e., a 46,XX male presenting because he is menstruating from his penis).

We hope that the success of this meeting has not only answered questions but stimulated new questions. We also hope that in sharing the contents of the conference with those who were unable to attend will spark new interest and new questions in this great field driving it forward with the great momentum initiated by these great scientists. We hope that you enjoy the proceedings of the 2nd World Conference of Hormonal and Genetic Basis of Sexual Differentiation and hope to see you at a future meeting.

New York  
Miami, Florida

Maria I. New  
Joe Leigh Simpson

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