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Q1 With over 20 years of experience in the field of reproductive medicine, what initially sparked your interest to pursue a career in this field and has motivated you to continue researching?

Honestly, it was kind of random. I was at a lecture talking about the mating behaviour of fish, and that triggered me to start speculating on how implantation happened in humans. This is the real reason why I got into reproductive medicine. On top of that, this was a very fascinating area. When I started, there was no, such thing as fertility clinics and assisted reproduction. The first child had been born through assisted reproductive technology (ART), but the general knowledge was not out there yet.

I educated as a biologist, and I had no idea that this was a career option and I accidentally found out. Then I was fascinated because it was a completely new field, and it was a field that combined both medicine and biology. There are lots of things we did not know and still do not know. We have to deal with three patients; we have an embryo, we have a female, and we have a partner; so, this was fascinating, and I got very intrigued by it.

Q2 You currently have more than 100 international publications to your name. What do you believe to be the current gaps in literature and which topics merit greater attention?

Over the years, we have worked very hard to look into stimulating oocytes, specifically endocrinology and understanding all the hormones: what they do, what they do not do, and what they work with. We have also researched oocyte and sperm biology, and which factors indicate developmental competence, so that we can select the embryo with the highest chance of pregnancy.

However, there is a huge area that we need to address where we have failed completely all over the world. This contrasts with what many of my colleagues here, at the University Hospital Copenhagen in Denmark, and other places do, which is working towards preventing diseases that we are very good at treating. Nobody has worked in preventing reproductive diseases, which I think is a huge problem and I started focusing on this more than 10 years ago. I tried to legitimise the debate addressing when we should have children, and how our biology is without being perceived as pressing young people, which is very difficult. But we need to have that debate. Here in Denmark, more than 12%

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of all children born through ART never become parents, and one in five males in Denmark never become a father. We set records every year in number of fertility treatments, illustrating that there is a wish to have children out there, but a lot of people miss their own biological window by postponing for many reasons; therefore, we need to start addressing the prevention of reproductive diseases, and how we ensure that the general population have an increased knowledge about reproductive biology.

Q3 In the recently published paper you co-authored, entitled 'A qualitative study on couples' attitudes and concerns regarding a freeze all strategy in ART treatment', what was the key message you were trying to deliver?

It is fantastic that we do studies now on couples' attitudes and concerns, so we are actively engaging in debate with our patients. How do they see things? This study showed a couple of things; the basic one was increased safety. Can we freeze all the embryos? If there is a risk of over stimulating the female, how do we ensure that, with the fantastic improvements in cryopreservation, the patients do not see this as a negative thing but understand that it is part of their safety.

Also, we found that starting treatment for patients is a relief. These are patients who have been trying to have a child for many years but failed. We are sort of a last stop, the last chance. Then when we start treating them and they feel a relief that now, finally, they are starting the process. However, they accept the safety of this if we inform them prior to starting treatment. If, for example, we say: "If you respond this way, we might either transfer the fresh embryos or cryopreserve them and transfer them in a later cycle, in order for us to ensure your safety."

Q4 You have specialised experience as a Senior Clinical Embryologist. What are some of the unique challenges associated with work in this field?

Embryologists have very restricted access to material that we can use for research. We can have access to human sperm cells, but we don't have access to human oocytes. So, we have to work around this problem, which very difficult is probably why some areas within embryology have developed very slowly.

Secondly, the title Senior Clinical Embryologist refers to a European Society of Human Reproduction and Embryology (ESHRE) initiative, which I was part of commencing. In many countries, including my country, you cannot study embryology. Maybe you can now some places, but in the last 20 years you have not been able to do that. Therefore, we needed to ensure that people working in this area were competent and had the best education they could have to fulfil this role. That is why we started this ESHRE initiative. It has been very successful in many ways and has increased knowledge tremendously in many groups working in laboratories. In recent years, it has also covered nurses and reproductive nurses so they can get a certification. They are studying a lot of the issues that we are working on and passing an exam that gives them the accreditation.

Q5 You co-founded the ESHRE 'International Fertility Education Initiative'. What are the main goals of this initiative?

I could talk about that for hours because I think that it is extremely important. When we talk about preventing diseases and educating the general population, it is important to realise that it is not about your fertility or my fertility, it is about our fertility. It takes two to have children. As a young female, you could be fertile, but if you fall in love with a male with no sperm cells you will not have children, and vice versa. Therefore, we need to discuss these things.

We know that the general awareness about these things is close to zero. While a lot of people think that they know something, most of that is wrong. We need to start addressing this to allow young people to make informed choices for their own life, and this means sex education. It is controversial to call it sex education in many places as it is not about sex, it is about reproduction. If a young male does not know the reproductive biology of their female partner, they might not be committing to having a family until it is too late for the partner to have children.

We need to prioritise this understanding. I call it reproductive sustainability and we need to prioritise this on a society level. We have very scary examples right now from South Korea, Japan, and Norway, where our societies are on the brink of collapse because we have too few children to maintain a well-functioning society. So, I think that it is very important to talk about these things.

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Q6 Over the years that you have been working in the field of assisted reproduction, how have you seen the field advance in terms of the technology used?

When I started in this area, we were only treating couples where the males had normal sperm quality and the females had blocked tubes and mechanical problems. However, we have achieved a lot within the profession since then; some say that we have reinvested all the gain that we have had to start treating other types of patients. When a great clinic in Brussels, Belgium, developed intracytoplasmic sperm injection, we could suddenly treat couples where the males had a low sperm quality.

We have had a lot of development, so that we can now treat, not only infertility problems, but also other types of problems such as young females with cancer. We can cryopreserve their ovarian tissue here at the clinic, not because they are having fertility problems but because the cure for that cancer will kill the oocytes in the ovary. We have couples who experience recurrent pregnancy loss. We have testing for genetic diseases. We are treating patients with HIV and hepatitis. We are treating so many different conditions that we could not dream of in the early days.

Q7 Since your appointment as Head of the Fertility Department at the Juliane Marie Centre (JMC) – Rigshospitalet, Copenhagen University Hospital, Denmark, what has been your proudest achievement?

It is the team that we have today, but I would like to stress that this is not my achievement: this is our achievement. It is how we have reached a point where we have crossed professional collaborations; we have very intense dialogue between doctors and biotechnologists, nurses, secretaries, and all the people who are needed to provide good professional services for the patient. Also, we recognise that many different professions are needed and are paramount to the research and success of what we do and what we try to achieve. I think that facilitating this way of working and seeing each other is fantastic change. However, I want to stress this is not my achievement: this is our achievement.

Q8 What advice would you give a young clinician trying to pursue a career in assisted reproduction?

I would give the same advice whether they were a young clinician, biologist, nurse, embryologist, secretary, geneticist, psychologist, or whoever is needed or has an important role to fulfil in assisted reproduction, and that is to go in and engage wholeheartedly. It is a very young area; it was only 40–50 years ago that the first child was born through. We still have so much to do and the demand for fertility treatments has increased enormously over the years. So, get in there, work wholeheartedly and enthusiastically, and engage in the work of preventing the problems that we have to treat as much as we do. One in eight children born through ART is way too high and we need to change that. And just imagine having a job that assists people in having a family. What a privilege!