

Nidacon News

The news letter from your ART supplier • No 1 • 2019

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Together we can make a difference!

We utilize express deliveries but would, of course, prefer another alternative. However, until there is another suitable alternative, we have joined UPS Carbon Neutral deliveries.



Gift to all Nidacon employees, re-usable bags to use when shopping groceries instead of plastic bags.

If you have come up with other ways of using our bottles or vials, please inspire us. Many small steps can make a big difference.

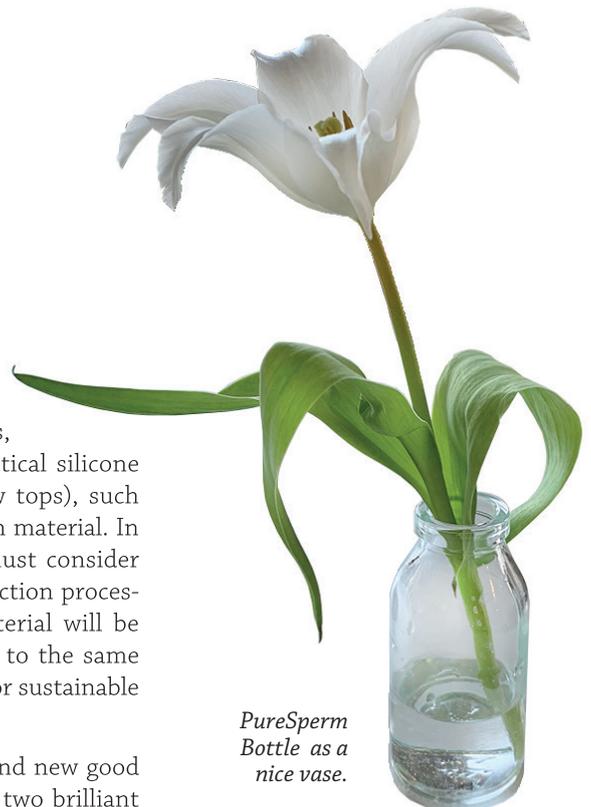
This means that we pay extra for every delivery to compensate for our deliveries carbon trail. This is re-invested, for instance in tree planting projects.

We use cardboard boxes for all our deliveries, and they are made from recycled material. They can be handled in the normal cardboard recycling. We have chosen recycled paper instead of Styro-foam chips or other plastic alternatives as protection inside the boxes. We still use polylam plastic walls for extra protection but are looking to find other alternatives. If you have any ideas, please contact us!

To avoid too much release of particles and paper dust, we have chosen virgin fibre boxes as an inner packaging but remain determined here to avoid using any plastic. The primary packaging or sterility barrier (packaging that is in

direct contact with the actual product such as glass bottles, plastic vials, plastic bottles, pharmaceutical silicone stoppers and plastic screw tops), such as the vial or bottle, vary in material. In these circumstances we must consider the product and the production processes to make sure the material will be optimised, and we cannot to the same extent consider recyclable or sustainable solutions.

Our glass bottles have found new good ways to be used. We have two brilliant examples from Nordic IVF Malmö in Sweden, using the bottle as a milk container for their patients when served with sandwiches, and turning the bottle into a beautiful little vase (could have been taken from the latest home decoration magazine).



PureSperm Bottle as a nice vase.



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Human Papillomavirus – an update



Nidacon attended the ESHRE Campus symposium in Ghent concerning Male factor infertility. Excellent speakers and interesting topics.

Andrea Garolla from the Padova University in Italy summarized several studies about Human papillomavirus (HPV) and affects on fertility.

HPV is the most prevalent sexually transmitted infection and its cancer induction is well documented. Although HPV infections are mostly asymptomatic, they alter reproductive health.

In men, HPV infection can affect sperm parameters, specifically motility. HPV-infected sperm can transmit viral DNA to oocytes, which may be expressed in the developing blastocyst. HPV can increase trophoblastic apoptosis and reduce the endometrial implantation of trophoblast cells, theoretically increasing the risk of miscarriage, preterm rupture of membranes and spontaneous preterm birth. In patients undergoing intrauterine insemination for idiopathic infertility, HPV infection confers a lower pregnancy rate. It has been suggested that vaccination could counter HPV-related sperm impairment, trophoblastic apoptosis, and spontaneous miscarriages; as based on in vitro studies.

Garolla presented several study evaluations, here are three of them;

The reproductive outcome of infertile couples undergoing assisted reproduction techniques (ART), with or without HPV semen infection.

Setting: Units of andrology, reproductive medicine, and gynaecology. Patients

were a total of 226 infertile couples. Male partners were evaluated by fluorescence in situ hybridization (FISH) for HPV on semen. Female partners underwent intrauterine insemination (IUI) or intracytoplasmic sperm injection (ICSI). Outcomes recorded were seminal parameters and FISH analysis for HPV in sperm head, spontaneous or assisted pregnancies, live births, and miscarriages.

ART in EUROPE

- ✓ Every year, about 800.000 ART cycles are performed in Europe
- ✓ Considering that prevalence of HPV semen infection is about 20% in infertile patients
- ✓ Every year in Europe, the outcome of more than 150.000 ART cycles could be impaired by HPV semen infection

Result: Fifty-four male partners (23.9%) had HPV semen infection confined to sperm, confined to exfoliated cells, or in both. During the diagnostic period, noninfected couples showed spontaneous pregnancies. IUI and ICSI treatments were performed in, respectively, 60 and 98 non-infected and in 21 and 33 infected couples, with 38.4% and 14.2% cumulative pregnancy rates, respectively. Pregnant follow-up showed a higher miscarriage rate in infected couples (62.5% vs. 16.7%). Ongoing pregnancies of the latter group were characterized by HPV infection confined to exfoliated cells.

Conclusion: A reduction in natural and assisted cumulative pregnancy rate and an increase in miscarriages are related to HPV at sperm level. Although the exact mechanism by which sperm infection can impair fertility remains unclear and is worthy of further investigations. If confirmed, these results could change the clinical and diagnostic approach to infertile couples.

Another follow-up study by Dr Garolla, recorded the effect of HPV vaccination in males of infertile couples with HPV. 151 infertile couples with detection of HPV in semen were enrolled in the study which showed that adjuvant vaccination was associated with enhanced HPV healing in semen cells and increased rates of natural pregnancies and live births.

One systematic was also presented in order to determine the relationship between HPV and reproductive health in both men and women, performed in ScienceDirect from January 1994 through August 2014.

From results published in PubMed it appears that HPV is associated with i) apoptosis in sperm cells; ii) alterations of semen quality through cell count decrease, amplitude of lateral head displacement reduction, mobility reduction and increase of anti-sperm antibodies level; iii) apoptosis in embryonic cells; iv) miscarriages or premature rupture of membrane. If HPV is not the main cause, it must be considered as a risk factor for reduced fertility or infertility. Effectively, HPV detection in pregnant women or on their partners can be considered as a risk of preterm birth, miscarriages and virus transmission to the new-born. Thus, it will be useful to consider HPV detection in both men and women for infertility diagnosis and before IVF procedures.

Overall, some questions remain unanswered and many studies are required to clarify the mechanisms underlining the effects of HPV in both female and male reproductive system.

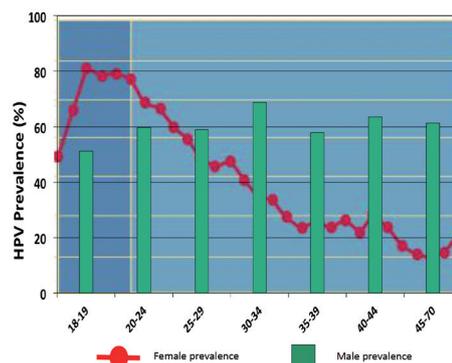
Ref: Garolla A, *Fertility&Sterility* 2016 Vol 105 pp65-72

HGarolla *Sci Rep*, 2018, Vol 8 pp 912

Human Papillomavirus Infection and Fertility Alteration: A Systematic Review T. Souho, Université Sidi, Morocco *PlosOne* 2015

Prevalence of HPV Infection in Male and Female

- While in females the prevalence is high in the first years after the sex debut and thereafter it decreases
- In males the prevalence remains high during the whole life



Giuliano A, et al. *CEBP* 2008
De Vuyst H et al. *Eur J Cancer* 2009; 45: 2632-2639

Nidacon Shanghai

Nidacon International AB, and Shenzhen Changhong Technology Co.Ltd., have together started a joint venture company in China for the development, production and marketing of Nidacon products.

Shenzhen Changhong Technology Co.Ltd. (CHT) is a well-established high-tech Chinese company, established in 2001 and listed on the Shenzhen stock exchange since 2010. The company has nearly 2500 employees and is headquartered in Shenzhen. During its 20 years of development, CHT has become an

international Hi-Tech company with global industrial bases and strong resource-integration capabilities, providing precision medical products & services, including Vitro Diagnostic reagents, life science lab consumables & IVB consumables, specimen collection & pre-treatment systems and specialized devices.



Production facility in Shanghai.

The production facility in Shanghai is ready for all Nidacon products but it will take some time before all products are cleared by medical authorities for market



The start of our joint venture at Nidacon Göteborg.

release. The registration process in China is quite demanding and we will work with our partner to launch the product to the market soon.

Briefs or boxers?

Largest study yet shows type of underwear is linked to men's semen quality: Boxer shorts are best!

The study differs from previous research on this topic because it includes a larger number of men (656) than previously, and because it is the first study to go beyond the traditional, narrow focus on semen quality. It includes information on a variety of indicators of testicular function, such as reproductive hormones and sperm DNA damage. These can help in understanding how choices of underwear affect the key regulator of sexual development and reproduction, the hypothalamic-pituitary-gonadal axis.

The researchers, led by Dr Lidia Mínguez-Alarcón, a research scientist at Harvard T.H. Chan School of Public Health (Boston, USA), recruited the male partners of couples who were seeking infertility treatment at the Massachu-



setts General Hospital between 2000 and 2017. The men were aged between 18 and 56, had an average body mass index (BMI) of 26, and had not had vasectomies.

Men who primarily wore boxer shorts had a statistically significant 25% higher sperm concentration, 17% higher total sperm count, 33% more swimming sperm in a single ejaculate and 14% lower

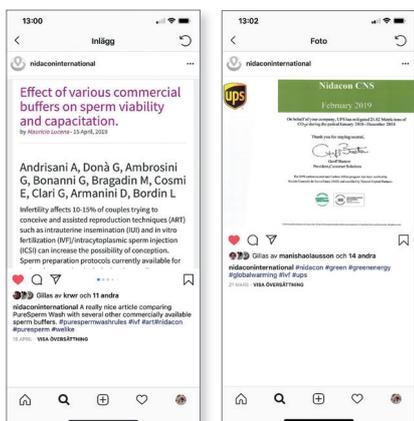
FSH levels than men who did not usually wear boxers, all were adjusted for factors that might affect the results, such as BMI, physical activity, hot baths and Jacuzzis, smoking and the year the sample was taken. In addition, more sperm were correctly shaped, although this result was not statistically significant. The greatest difference in sperm concentration was found between men wearing boxer shorts most frequently and men wearing jockeys or briefs.

The researchers point out that it may not be possible to generalise the findings of their study to all men as the study focused on men attending a fertility centre. However, the men in this study tended to have good semen quality when compared to the World Health Organization's reference standards. It is also not possible to prove from these findings that the type of underwear causes the difference in semen quality and FSH levels, only that there is an association between them. Other factors that might affect scrotal heat, such as type of trousers (e.g. skinny jeans) and underwear fabric, could also affect the results.

Follow Nidacon on

Facebook,
Instagram,
LinkedIn,
Twitter or
Youtube

Make sure that you get all our news, updates, tips & tricks that can be useful for your work in the IVF lab.



LinkedIn

YouTube

A new version of our technical manual is now available

You can find it on our website www.nidacon.com, and if you need a printed version, please let us know.



Upcoming events

- **ESHRE Vienna 23-26 June**
See you in booth no D36



European Society of Human Reproduction and Embryology



- **Nordic Fertility Society (NFS) 22-24 August**
Gothenburg Sweden



- **75th ASRM Scientific Congress & Expo**
October 12-16, 2019
Philadelphia, Pennsylvania, USA

Who to contact



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