

Coda® & Pump Catalogue

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The Ultimate VOC Filtration for ART

The only clinically tested and proven high performance VOC filtration technology for safe use in IVF laboratories.

Why Should You Use Coda®?

Extensive studies and testing of incubators have shown that the air inside the incubators contains six times more Volatile Organic Contaminants (VOCs) and Chemical Air Contaminants (CACs) than outside air (Cohen *et. al.*). The incubators and other environmental chambers behave as a stand-alone micro-environment and, therefore, have their own unique levels of contaminants, VOCs, CACs, vapors, solvents, micro-organisms, endotoxins, and particulates.

Installing a Coda® Unit inside your incubator creates a perfectly controllable air environment and constantly circulates the air and removes VOCs such as Styrene, Acetone, Benzene, Toluene, Octane, n-Decane, Freon, Aldehydes, Nonane, Methylcyclohexane and Butane present in most incubators and laboratory environments.

Coda® was introduced in 1997 and has been the only technology with significant impact on IVF results. Coda® has proven to increase implementation and pregnancy rates by 5–25% overall or by 6% on average in clinics worldwide.

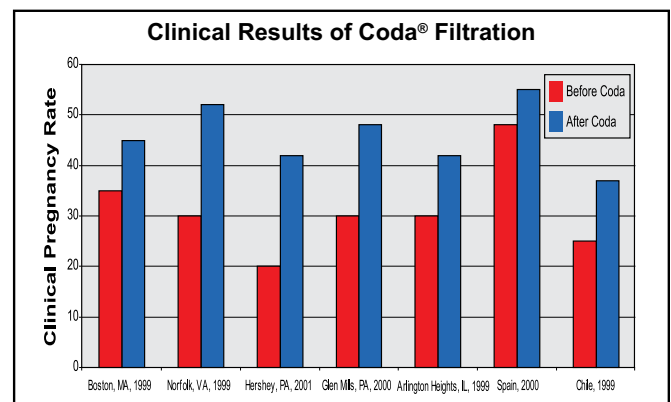
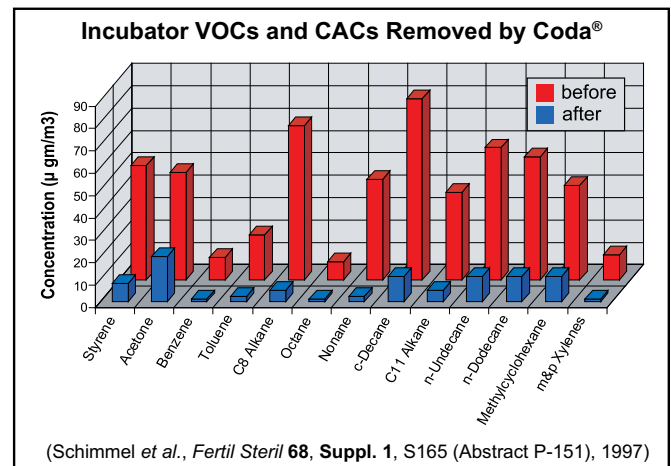
Coda® installation is now becoming a standard and required practice for most IVF labs. More than 500 leading IVF clinics worldwide are using CodaAir® technology and have reported increased results.

In addition, the patient population is becoming more aware of the impact of the air quality on embryo development and pregnancy results. The patient population has recognized CodaAir® products as a necessary technology for the protection and improvement of the embryo culture environment and results.

The following are some of the common sources of air contamination inside incubators and laboratories in general.

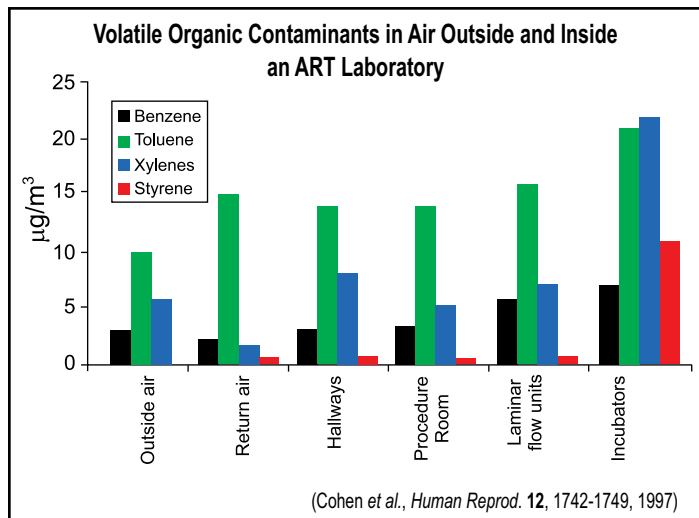
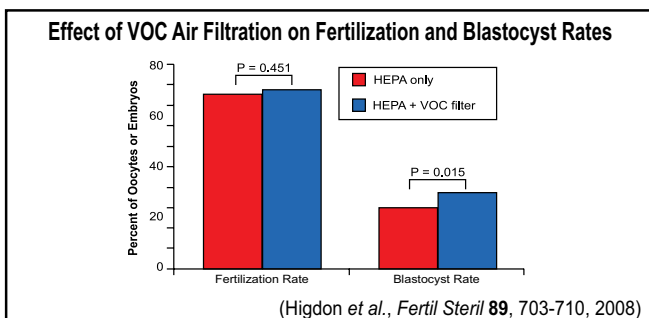
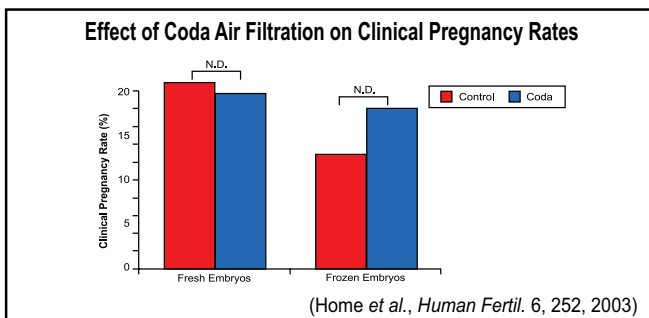
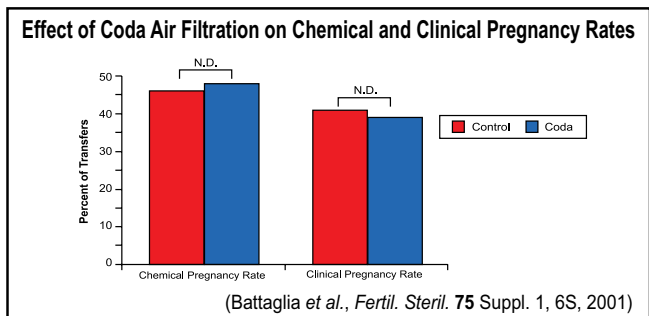
- Every time you open an incubator air contaminants such as VOCs and particulates present in any laboratory environment will enter and reside inside your incubator.
- The incubator 's incoming gas lines such as CO₂, N₂, or trigas contain VOCs and particulates that may contaminate your incubator.
- Plasticware placed inside your incubator release high levels of styrene and other VOCs.
- Equipment and furniture off-gassing. For example, aldehydes are released from formica materials.
- New materials release VOCs. New incubators have especially high levels of VOCs which you can smell easily. This will impact culture results in a new incubator.
- Unexpected contamination in the air surrounding the building, inside air systems or the laboratory from general outside air pollution such as car exhausts, industry, packaging and insulation, construction, adhesives and paints, demolition, smog levels, and waste will unexpectedly penetrate into the laboratory and the incubator.

CodaAir® products have been used successfully worldwide, and have been proven to reduce the contamination levels of most gasses by up to 99.97% and in some cases virtually eliminate 100% of unwanted VOCs.





Protect Human Embryos from VOCs



CodaAir® products are common-sense safety devices to protect human embryos from unforeseen Volatile Organic Compounds (VOCs) and other contaminants in ART laboratory environments.

- CodaAir® effectively removes VOCs. VOCs are too small to be removed by HEPA filtration alone.
- Built-in air systems with positive pressure do not provide the complete solution to remove VOCs. Coda® offers additive effect to air filtration in IVF laboratories for maximum filtration of VOCs.
- Coda® is an important line of defense in case of mechanical failure of any central air system in the IVF laboratory.
- VOCs can have significant detrimental effects on human embryos.

The CodaAir® Lineup

All products in the CodaAir® Lineup are clinically proven for safe and effective use in human ART laboratories. The ultimate effective air technology to purify volatile organic compounds and pollutants.

Our High Performance™ 4-Stage Filter® system has been proven to improve air quality in laboratories and may increase expected outcome and overall results. Coda® products have protected IVF laboratories for over 20 years and have shown a superior performance record.

Coda® ECO™ Series

Large capacity purification units with our efficient 4-Stage Filter System



ECO™ 1500

Catalogue #: 115V 230V	GECO-115 GECO-230
Coverage: sq. ft. sq. m.	1000 – 2400 92 – 223
Air exch. per hour	5 – 22 times
Size D x W x H: in cm	13.5 x 18 x 73 34 x 46 x 185
Weight: pounds kilograms	135 61
Change Filters As Scheduled	
Semi-Annual Filters	GESA-1500
Annual Filters	GEAK-1500

Positive Pressure Unit

Catalogue #: 115V 230V	CAPP-115 CAPP-230
Fresh air turnover and air exchanges: Area: 200 sq ft (18.58 sq m) Volume: 1600 cu ft (45.31 cu m)	18.75 times per hour
Fresh air turnover and air exchanges: Area: 600 sq ft (55.74 sq m) Volume: 4800 cu ft (135.9 cu m)	6.25 times per hour
Size D x W x H: in cm	13.5 x 18 x 73 34 x 46 x 185
Weight: pounds kilograms	135 61
Change Filters As Scheduled	
Semi-Annual Filters	CPPS-001
Annual Filters	CPPA-001



ECO™ 1200

Catalogue #: 115V 230V	GELT-115 GELT-230
Coverage: sq. ft. sq. m.	800 – 1800 74 – 167
Air exch. per hour	8 – 27 times
Size D x W x H: in cm	13 x 18 x 54 33 x 46 x 137
Weight: pounds kilograms	120 54
Change Filters As Scheduled	
Semi-Annual Filters	GESA-1200
Annual Filters	GEAK-1200

CodaAir® 900

Catalogue #: 24V Universal Adapter	A900-009	
Coverage: sq. ft. sq. m.	900 – 1100 83 – 102	
Air exch. per hour	5 – 25 times	
Size D x W x H: in cm	12 x 18 x 45 30 x 46 x 114	
Weight: pounds kilograms	75 34	
Change Filters As Scheduled		
Choice A (in/box)	Initial Filter	included
	Semi-Annual Filters	CAFK-900 (2pk)
Choice B (containers)	Semi-Annual Filters	CCSK-900
	Annual Filters	CCFK-900



Coda® Aero® Series

Small, Compact, Versatile Units



Aero® 500

Catalogue #: 24V Universal Adapter	GCAU-000
Coverage: sq. ft. sq. m.	300 – 600 28 – 55
Air exch. per hour	8 – 14 times
Size D x W x H: in cm	16 x 16 x 25 41 x 41 x 64
Weight: pounds kilograms	50 23
Change Filters Every 3 Months	
Initial Filter	Included
Quarterly Filters	GCAF-001 (1 pk) GCAF-002 (2 pk)



Aero® 700

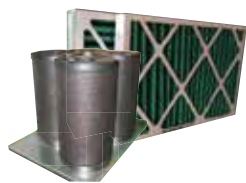
Catalogue #: 24V Universal Adapter	A700-000
Coverage: sq. ft. sq. m.	500 – 700 46 – 65
Air exch. per hour	4 – 22 times
Size D x W x H: in cm	12 x 18 x 26 30 x 46 x 66
Weight: pounds kilograms	52 24
Change Filters Every 6 Months	
Initial Filter	Included
Semi-Annual Filters	GCAF-702 (2 pk)

CodaAir® 800

Catalogue #: 24V Universal Adapter	A800-008
Coverage: sq. ft. sq. m.	500 – 700 46 – 65
Air exch. per hour	4 – 22 times
Size D x W x H: in cm	12 x 18 x 26 30 x 46 x 66
Weight: pounds kilograms	52 24
Change Filters Every 6 Months	
Initial Filter	Included
Semi-Annual Filters	CAFK-800 (2 pk)



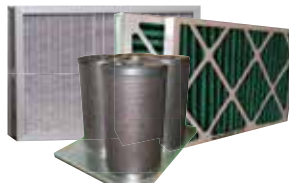
Filters For All Units



Semi-Annual Filters

For the ECO™ 1500, ECO™ 1200, Positive Pressure Unit and CodaAir® 900 models.

Change 6 months after annual filters.



Annual Filters

For the ECO™ 1500, ECO™ 1200, Positive Pressure Unit and CodaAir® 900 models.

Change 6 months after semi-annual filters.



Round Filters

For the Aero® 500 model.

Change every 3 months.
Sold as singles or in a 2 pack.



Square Shirtbox Filters

For the Aero® 700 and the CodaAir® 800 & 900 models.

Change every 6 months.
Sold only in a 2 pack.

Coda® Units for Your Incubator

Proven filtration technology to remove contaminants such as VOCs from inside incubators.
 ...Common Sense Safety Devices to Protect Embryos, Stem Cells or any other Cell Culture

Coda® Incubator Units have proven themselves in human IVF for the past two decades to remove VOCs and CACs presents in any incubator or laboratory.

Coda®2 Unit
Place on the top shelf of the incubator.

Cat # C2IU-010



Coda® Unit
Place on the top shelf of the incubator.

Cat # GCIU-010

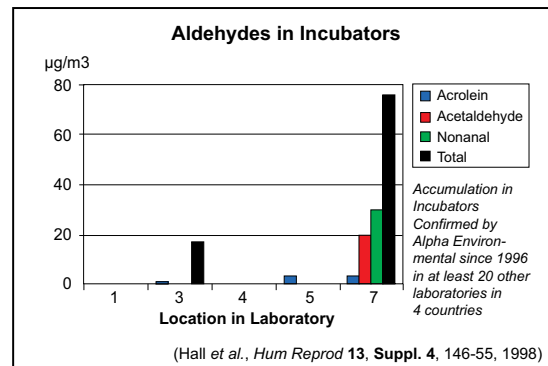
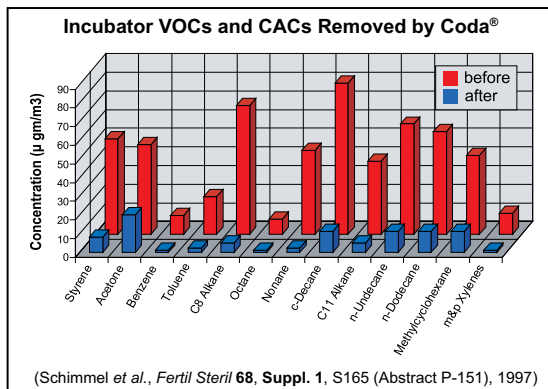
Coda® Filters

Cat #: GCIF-006 (6 pk)
GCIF-012 (12 pk)



Coda® SP
Mount into the access hole of the incubator.

Cat # GCSP-010



Using Coda® inside your incubator has proven to remove VOCs and CACs and other particulates that can potentially inhibit any cell culture development. Testing in certain laboratories has shown that in the presence of formaldehydes even the mouse cell culture was inhibited. Coda® is a patented technology that is manufactured by a certified ISO medical company. Each building material is tested for any off-gassing.

Coda® filters include activated carbon filtration and a 99.97% HEPA filter to remove VOCs, CACs and particulates completely from the air inside your environment. This will improve your embryo and stem cell quality and development, along with giving you better overall performance and results.

Our Coda®2 Unit is 'greener', save on energy and are made of 100% recyclable materials.

Do you know what VOCs reside inside your incubators?
styrene, methylcyclohexane, acetone, benzene, n-Decane, octane, etc.

More Carbon... Better Results

CodaAir® Positive Pressure Unit

High efficient air purification with OUR UNIQUE 4-Stage filter system.

Protect embryos from VOCs ...Embryos do not have an “immune system”

Human Embryos deserve Safe and Proven Technologies specially designed and manufactured for IVF in ISO 13485 * 9001 Certified medical facilities.

Operating Security

Rigorous design specifications have been applied in the development of the CodaAir® System + Positive Pressure Unit to ensure maximum air purification. The CodaAir® + Positive Pressure Unit reduces the presence of VOCs, bacteria/fungal spores and all particulate matter using a 4-stage filtration system. The design of the unit assures continuous removal of VOCs and particulates in the laboratory.

Highly Effective and Proven System for Removing VOCs

The unique design and concept of the CodaAir® + Positive Pressure Unit reduce VOCs in the air of the IVF laboratory. High quality activated carbon and potassium permanganate act to efficiently absorb all VOCs and aldehydes, reducing their effect on embryos, gametes and embryologists.

Air Quality Issues

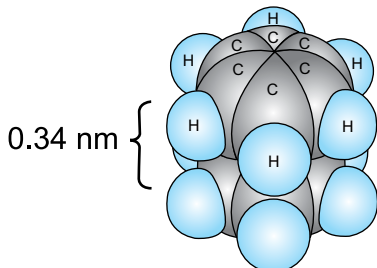
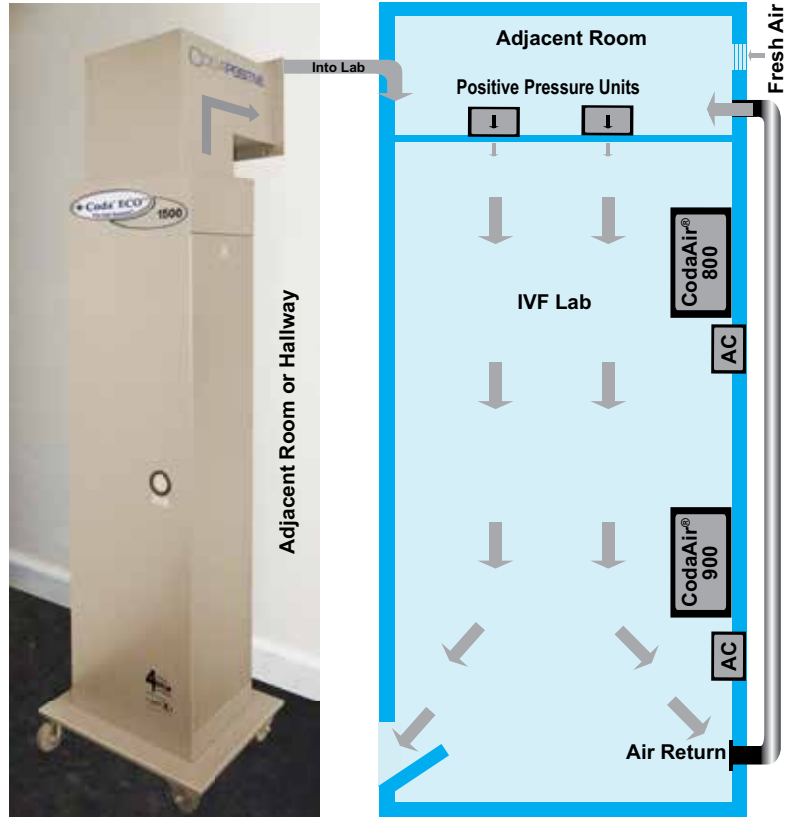
CodaAir® + Positive Pressure Unit helps with off-gassing of new materials. Furniture, paint, adhesives, plastic packaging and cleaning supplies all release detrimental levels of VOCs. The CodaAir® + Positive Pressure Unit removes them and circulates fresh, clean air into the laboratory.

Pollution and Photochemical Smog

In a typical IVF laboratory there may be high levels of VOCs and CACs. Sources can range from air pollution, hospital activities to construction. Current AIA standards for “positive air pressure” require three (3) fresh air changes per hour. The CodaAir® + Positive Pressure Unit has a fresh air turnover rate of 18.75 times per hour in a 200 sq ft, 1600 cu ft room (18.58 sq m, 45.31 cu m) and 6.25 times per hour in a 600 sq ft, 4800 cu ft room (55.74 sq m, 135.9 cu m), providing the cleanest possible environment for embryos.

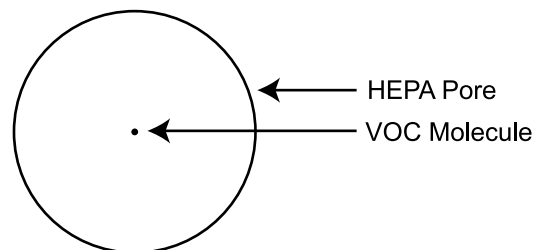
HEPA is not enough! ...Only activated carbon can remove VOCs

CodaAir® effectively removes VOCs. VOCs are too small to be removed by HEPA filtration alone.



Scale is Important

VOC molecules are 1,000 – 10,000 times smaller than particulates



Pioneer Pro-Pumps are the most dependable IVF aspiration pumps.

We have improved our Pioneer Pro-Pumps and now meet worldwide strict standards for CE, ISO and CSA. The most dependable IVF Aspiration Pump, for over 25 years, is even better, and is used in the majority of IVF laboratories worldwide.

Single Vac Pioneer Pro-Pump®



Dual Vac Pioneer Pro-Pump®



The Pioneer Pro-Pumps give you:

- A fully adjustable and controlled vacuum up to 500 mmHg
- A quiet, smooth and responsive operation for aspiration
- Rapid occlude to clear blockage
- Made in USA
- Quietest in the Industry
- Light Weight
- ISO 13485 Certified
- Responsive
- 5 Year Warranty
- Made in USA
- Steel Housing
- 115V & 230V
- CE Certified

The only clinically tested and proven high performance VOC filtration technology for safe use in IVF laboratories.

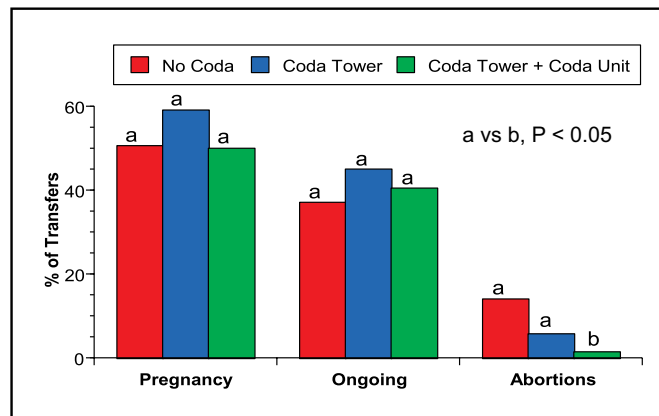
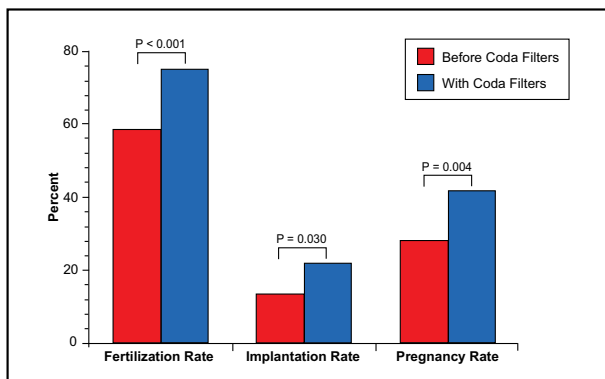


Fig. 1. Effect of Coda® Filtration on Pregnancy and Abortion Rates. (Racowsky *et al.*, Proc. 11th World Congr. IVF & Hum. Reprod. Genet, 1999)



	Before Coda® Filters	With Coda® Filters
Period	6 months	12 months
Number of patients	65	154
Patient age (years)	35.7	36.2
Number of cycles	86	207
Transfers: Day 2	1	68
Day 3	74	92
Day 4	0	3
Day 5	0	16

Fig. 2. Effect of Coda® Filtration on Fertilization, Implantation, and Pregnancy Rates. (Lopez *et al.*, Palumbo IVF, La Laguna, Tenerife, Spain, 2004, unpublished)

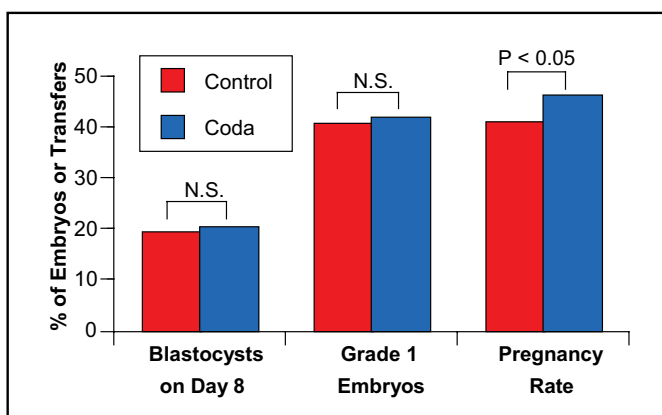


Fig. 3. Carbon-activated gas filtration during in vitro culture increased pregnancy rate following transfer of in vitro-produced bovine embryos. (Merton *et al.*, Theriogenology 67, 1233-8, 2007)

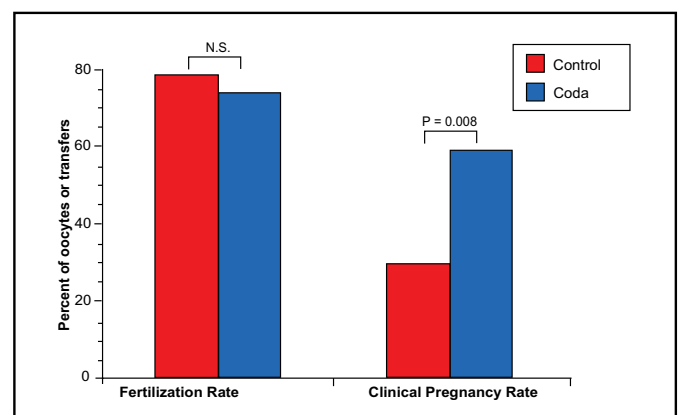


Fig. 4. Prospective randomized crossover analysis of the impact of an IVF incubator air filtration system. (Mayer *et al.*, Fertil. Steril. 72, Suppl. 1, S42, 1999)

PubMed link: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=17331571

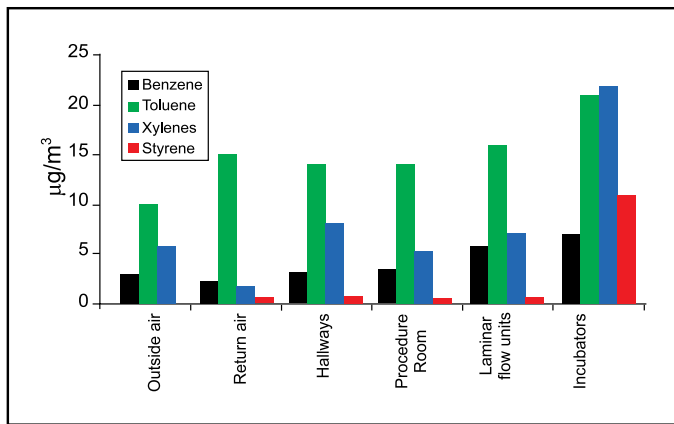


Fig 5. Volatile Organic Contaminants in Air Outside and Inside an ART Laboratory. Cohen *et al.*, *Human Reprod.* 12, 1742-1749, 1997)

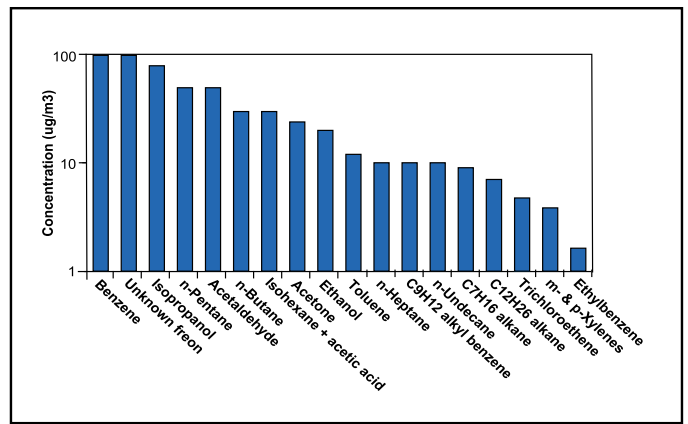


Fig 6. Volatile Organic Contaminants in Compressed CO₂ Used for ART. (Cohen *et al.*, *Human Reprod.* 12, 1742-1749, 1997)

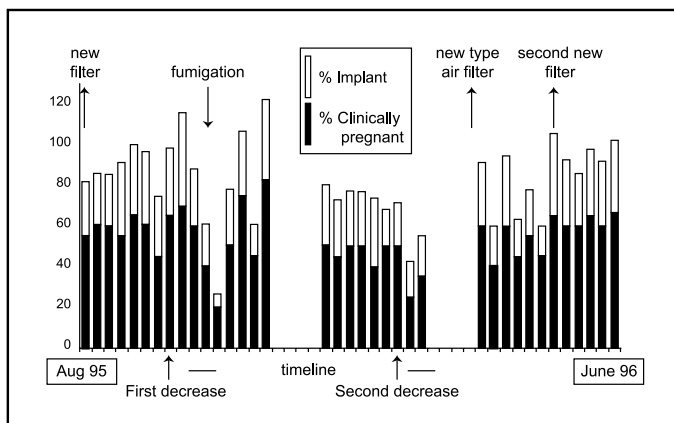


Fig 7. Effect of Air Quality on the Results of Human IVF. (Cohen *et al.*, *Human Reprod.* 12, 1742-1749, 1997)

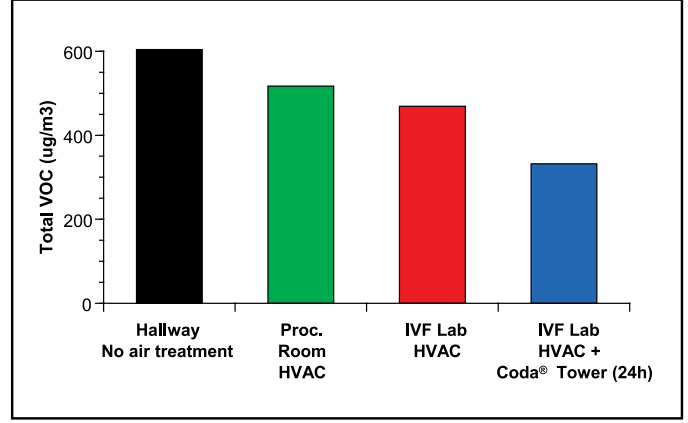


Fig 8. Effect of Use of a Coda® Tower for 24 Hours on Total VOC Concentrations. (Forman *et al.*, *Fertil Steril* 82, Suppl. 2, S324, 2004)

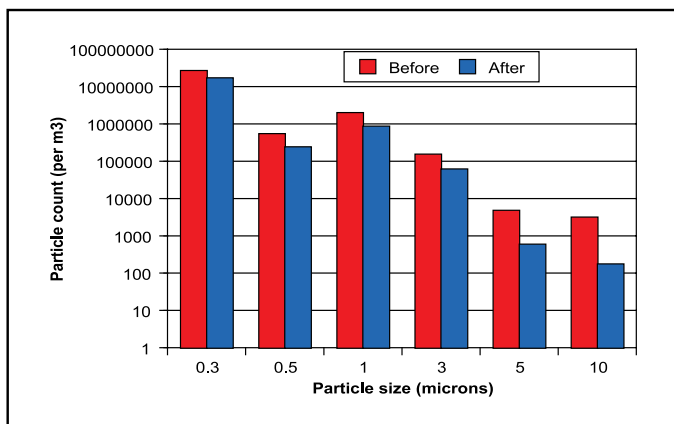


Fig 9. Effect of Use of a Coda® Tower for 24 Hours on Particulate Counts. (Forman *et al.*, *Fertil Steril* 82, Suppl. 2, S324, 2004)

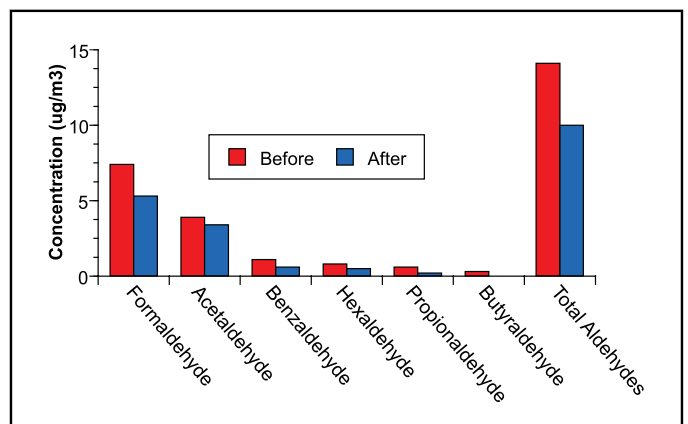


Fig 10. Effect of Use of a Coda® Tower for 24 Hours on Aldehyde Concentrations. (Forman *et al.*, *Fertil Steril* 82, Suppl. 2, S324, 2004)

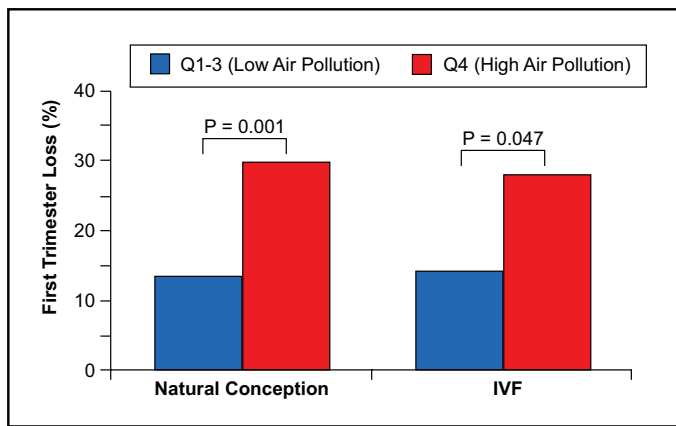


Fig 11. Effect of Follicular Phase Particulate Air Pollution on Pregnancy Loss. (Perin *et al.*, *Fertil. Steril.*, 2009, in press)

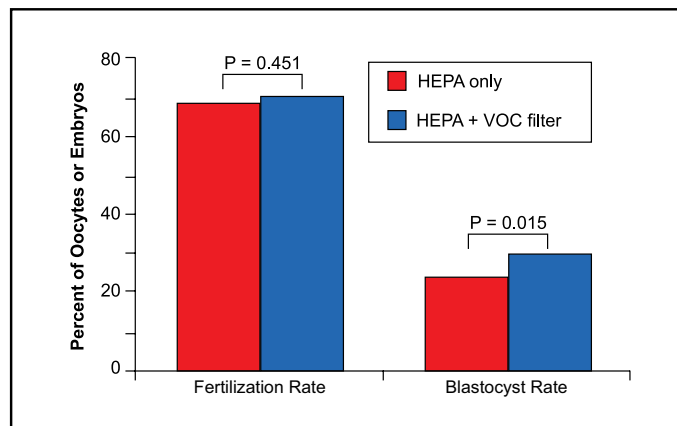


Fig 12. Effect of VOC Air Filtration on Fertilization and Blastocyst Rates. (Higdon *et al.*, *Fertil Steril* 89, 703-710, 2008)

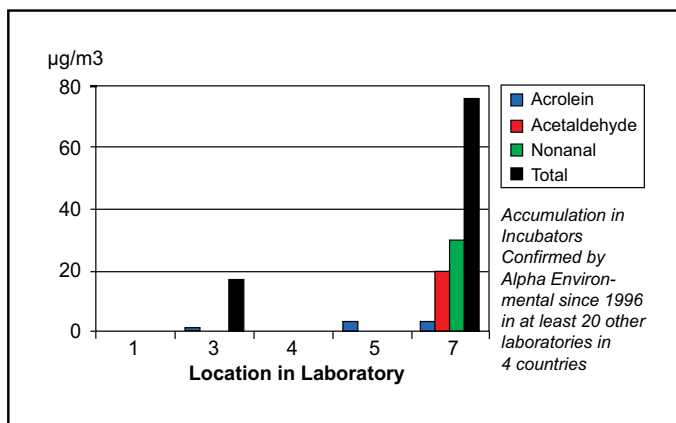


Fig 13. Aldehydes in Incubators. (Hall *et al.*, *Hum Reprod* 13, Suppl. 4, 146-55, 1998)

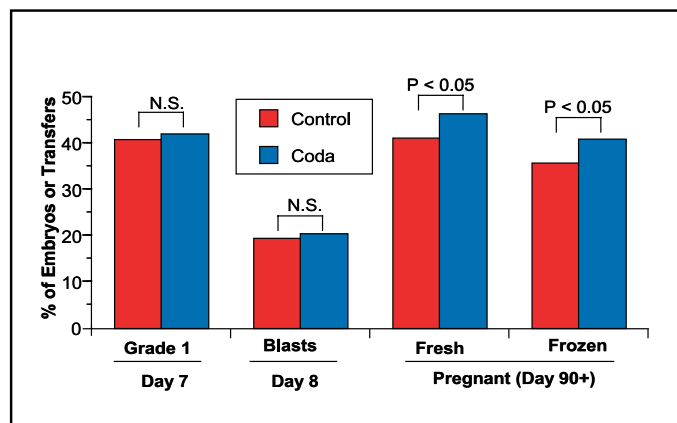


Fig 14. Effect of Coda® Filtration on Bovine Embryo Quality and Pregnancy Rates. (Merton *et al.*, *Theriogenology* 67, 1233-1238, 2007)

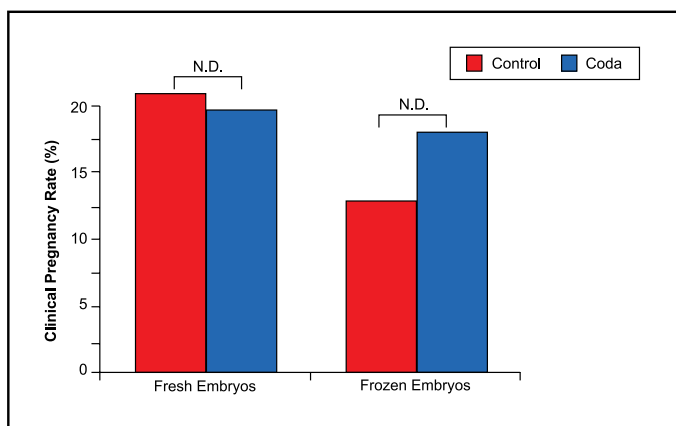


Fig 15. Effect of Coda® Air Filtration on Clinical Pregnancy Rates. (Home *et al.*, *Human Fertil.* 6, 252, 2003)

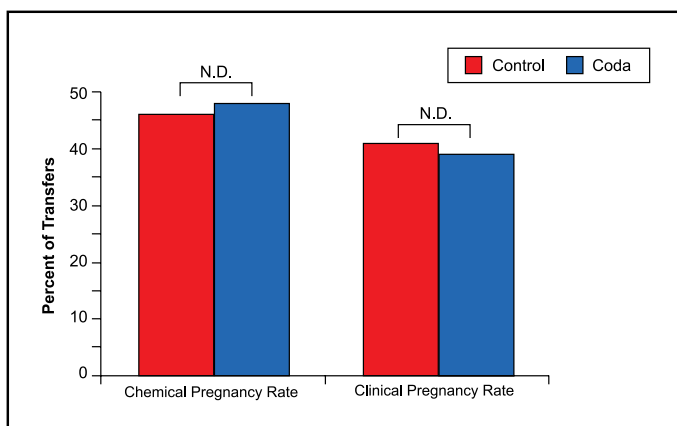


Fig 16. Effect of Coda® Air Filtration on Chemical and Clinical Pregnancy Rates. (Battaglia *et al.*, *Fertil Steril* 75, Suppl. 1, 6S, 2001)