



ASX Release (ASX: MEM)

FELIX (FORMERLY SPERMSEP) PROTOTYPE CARTRIDGES PASS FIRST HURDLE

Sydney, Thursday 13 July 2017

The first two cartridges for the next generation “Felix” device have met the first performance requirements after internal testing by Memphasys. Felix is a device developed by Memphasys to automate the selection of the most viable sperm for human IVF without imparting DNA damage to the sperm.

Hydrix, Memphasys’ engineering development partner, has been given approval for completion of the order to supply three further cartridges. These prototype cartridges have re-usable components for R&D purposes, however, the final cartridges to be used in the clinic will be fully disposable.

The results of these initial tests, using healthy human ejaculate, are provided in the attached presentation about the Felix project.

Memphasys is now providing a prototype cartridge to the University of Newcastle for further testing and validation before additional testing and validation of the remaining three prototype cartridges is performed by our IVF clinic development partners: the Monash IVF Group, Westmead IVF and the UNSW IVF Group.

Post this validation, Memphasys will then develop the final, fully disposable cartridges that will be used in the end-product to be validated by *in-vitro* global key opinion leader (“KOL”) studies which are anticipated to start in approximately 6 months’ time, subject to funding.

For further information please contact:

Alison Coutts
Executive Chairman
+61 2 8415 7300
alison.coutts@memphasys.com

About Memphasys

Memphasys Limited (**ASX: MEM**) specialises in biological separations for high value commercial applications. The Company’s patented membrane processes in combination with electrophoresis, the application of an electrical potential difference across a fluid, enable the separation of high value substances or contaminants from the fluid in which they are contained.

The main application of the technology is the separation of the most viable sperm cells for artificial reproduction, most particularly for human IVF.

Memphasys Limited
30-32 Richmond Road
Homebush West NSW 2140

Postal Address
P.O. Box 2202
Homebush West NSW 2140

Contact Details
P +612 8415 7300
F +612 8415 7399

E info@memphasys.com
W memphasys.com
ABN 33 120 047 556



Felix Project Update

Alison Coutts

Executive Chairman

Memphasys Limited

Market Need to Address: Male Infertility

- Need to reduce male factor contributions to couple infertility (presently ~40%)
- Need to decrease ART¹ financial and emotional cost by decreasing
 - Cost per procedure
 - No. of procedures required
 - Patient angst associated with ART

1. Assisted Reproductive Technology

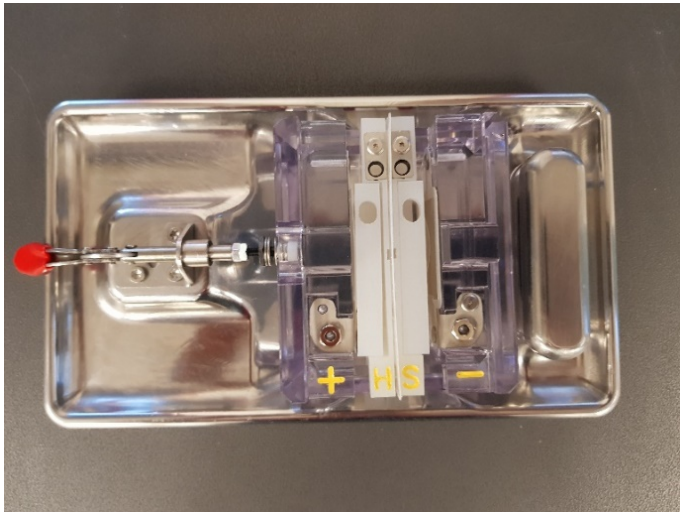
Problems with current sperm selection processes

Density Gradient Centrifuge, “DGC” (Used for IVF and IUI)	Swim up (Used for ICSI)
Slow, laborious lab processes (~40 minutes)	Quite laborious (~30 minutes)
Damages sperm DNA: <ul style="list-style-type: none"> ➤ less pregnancies ➤ less full term births ➤ may lead to genetically damaged progeny 	Requires motile sperm
	Low sperm harvest
	Manual sperm selection <ul style="list-style-type: none"> ➤ bypasses natural selection of fittest sperm ➤ can unknowingly select sperm with damaged DNA

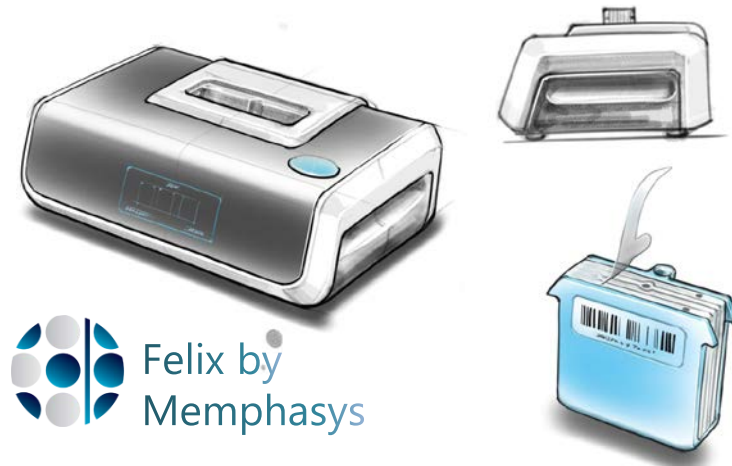
Felix: Memphasys' product to address male factor infertility²

Felix, MEM's lead product program, is a device to prepare sperm for use in artificial reproduction

Felix current cartridge prototype



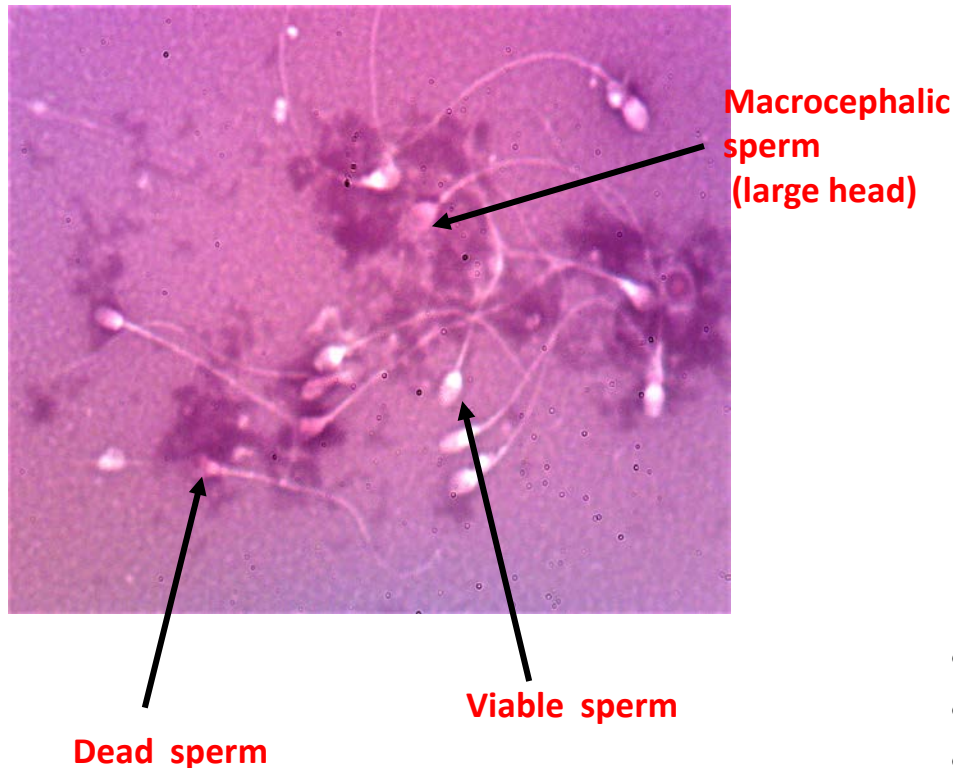
Felix 'fast prototype' device & cartridge



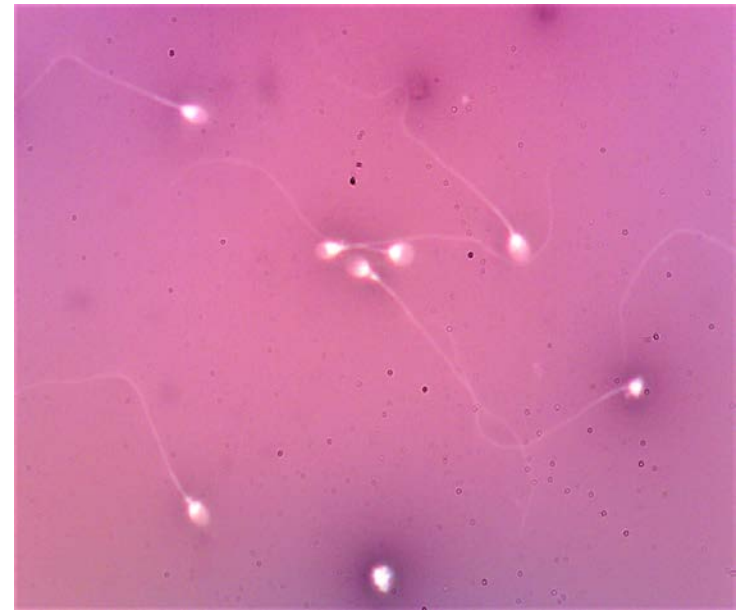
2. Memphasys (MEM) employs its patented IP (electrophoresis + specialised porous membranes) to enable separation of high-value cells and proteins from biological fluids

Prototype cartridge performance on healthy human ejaculate

Sample before treatment



After treatment - 6 minutes



- Separation of viable sperm ; no debris
- Intact membranes and acrosomes
- Higher average motility
- Reduced DNA damage

Human ART Market

- ART Market size:
 - Initial accessible market (IVF, ICSI): \$600 million (est)
 - Plus IUI¹ market: \$1.2 billion

Other Human ART Market Data	
Couples with fertility issues	>50 m
Australian couples seeking 1VF treatments	1 in 6
IVF clinics globally	~4,000
IVF babies born per year	~400,000
IVF treatments market size 2012/2020	US\$9.3bn /US\$21.6bn (F)
No. cycles per year	~6 million
IVF consumables market	US\$450m
Consumables cost per IVF cycle	\$400
Av. cost to patient per cycle: developing/ developed countries	~\$1,500/ ~\$10,000

Sources: Vitrolife Annual Report 2016, Industry interviews, ESRE, SART, ANZARD

1: Intra-Uterine Insertion

Indicative Felix Key Milestones and Cumulative Costs

