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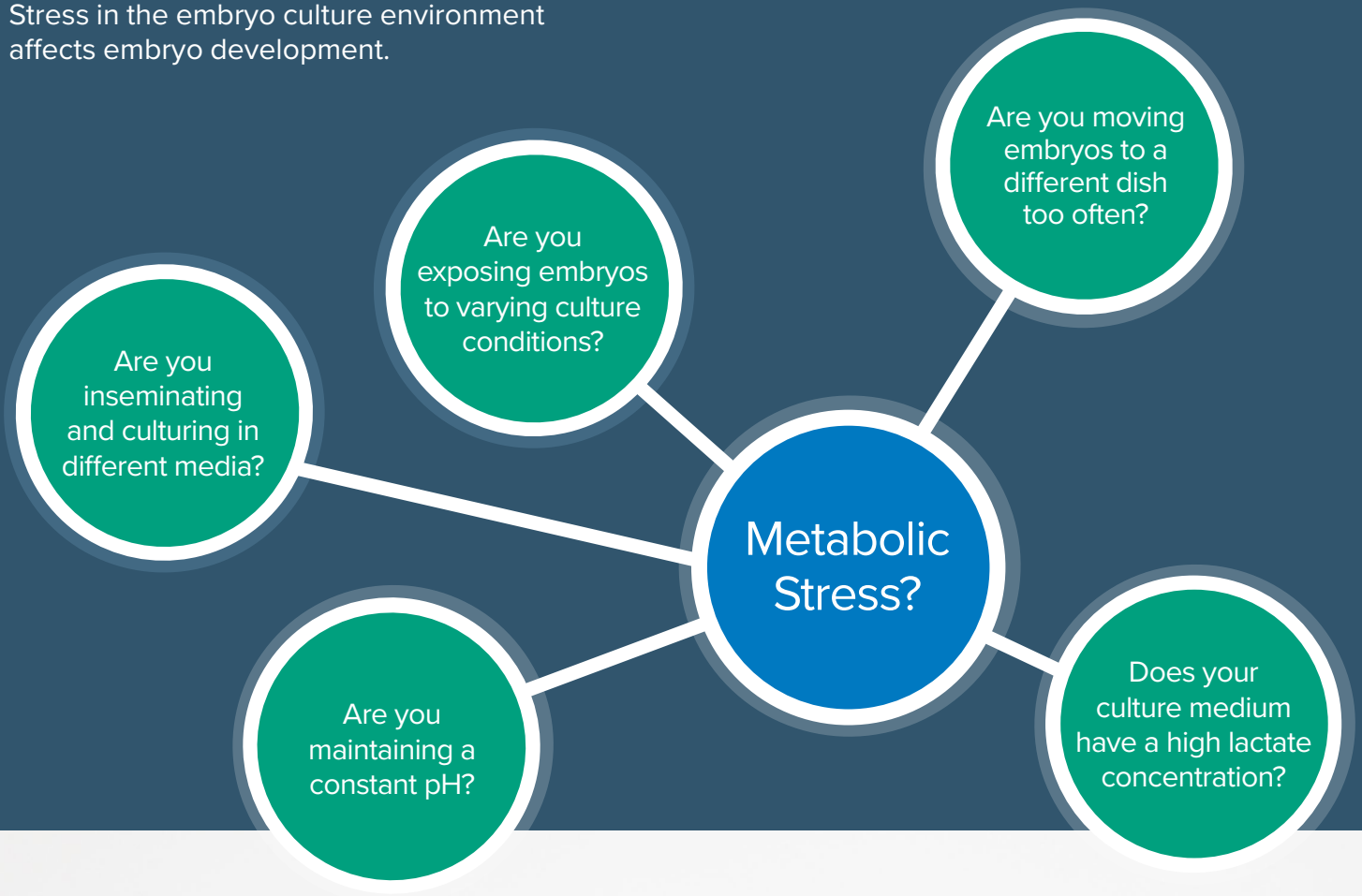
Continuous Single Culture-NX (CSCM-NX)

MINIMIZE METABOLIC STRESS FROM DAY 0

Are Your Embryos On The Path To Metabolic Stress?

Stress in the embryo culture environment affects embryo development.



Continuous Single Culture-NX (CSCM-NX) is a clinically-proven, low lactate, single-step medium that helps improve blastocyst development when used from oocyte identification through culture.

One Medium for Optimal Culture Outcomes

CSCM-NX provides an optimal environment for oocyte and embryo development by eliminating unnecessary stress when introduced at Day 0.

- **A low lactate culture medium keeps metabolic rates efficient and improves blastocyst utilization rates when used from oocyte identification through the blastocyst stage**
- **Minimize embryo disturbances**
  - No dish changes
  - Reduce pH fluctuations
  - Reduce exposure to varying culture conditions
- **Save on laboratory supplies**
  - Reduce media usage – no medium changes
  - Fewer dishes and medium preparation steps
- **Skip the protein supplementation step with Continuous Single Culture-NX Complete (CSCM-NXC)**
  - Contains 5 mg/mL of Human Serum Albumin (HSA)

Starting with Lower Lactate Concentrations Maintains Efficient Metabolic Rates

Pyruvate, lactate, and glucose are main energy sources for oocytes and embryos, while pyruvate is the preferred energy source at early cleavage stages.[1,3]

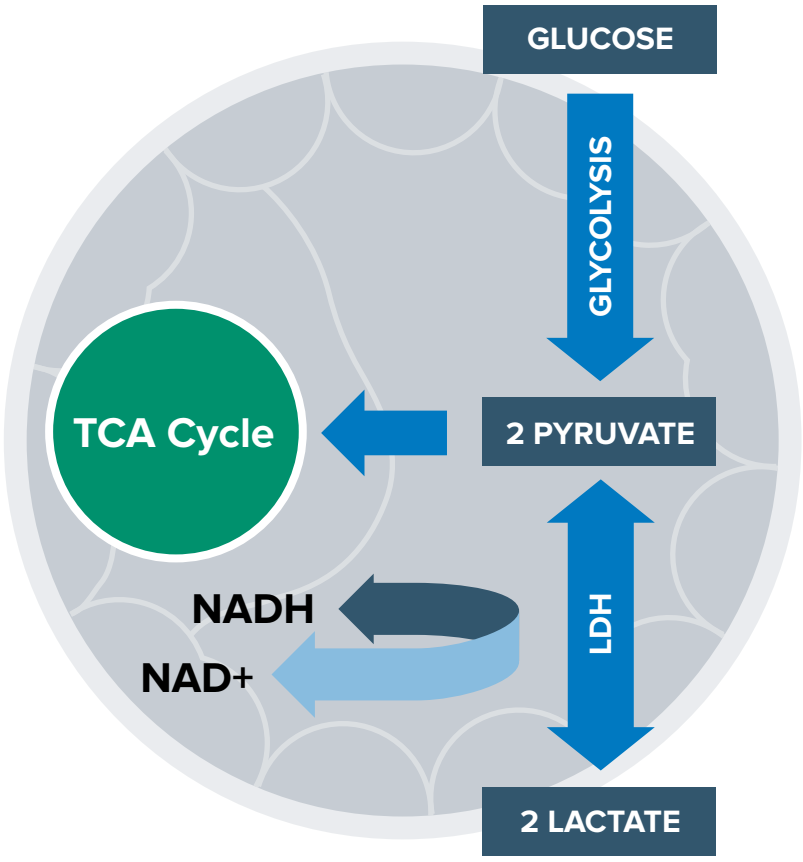
Glucose is naturally consumed by embryos at all stages of development. The consumption increases as the embryo progresses to the blastocyst stage.[2]

The glucose taken up from the culture medium is converted to pyruvate and then into lactate by lactate dehydrogenase (LDH), with the concomitant production of NAD+ from NADH. This reaction is reversible and operates close to equilibrium.[3,4]

Lactate is produced naturally by embryos from glucose metabolism, with two molecules of lactate appearing in the culture medium for every one molecule of glucose consumed.

As glucose consumption increases, production of lactate increases and accumulates in the culture medium, resulting in a negative influence on embryo metabolism due to reduced pyruvate conversion by LDH and oxidation.[3]

Excess lactate in the culture medium, in addition to pyruvate and glucose, can burden metabolic efficiency, as embryos naturally produce lactate during energy production.[1,3]

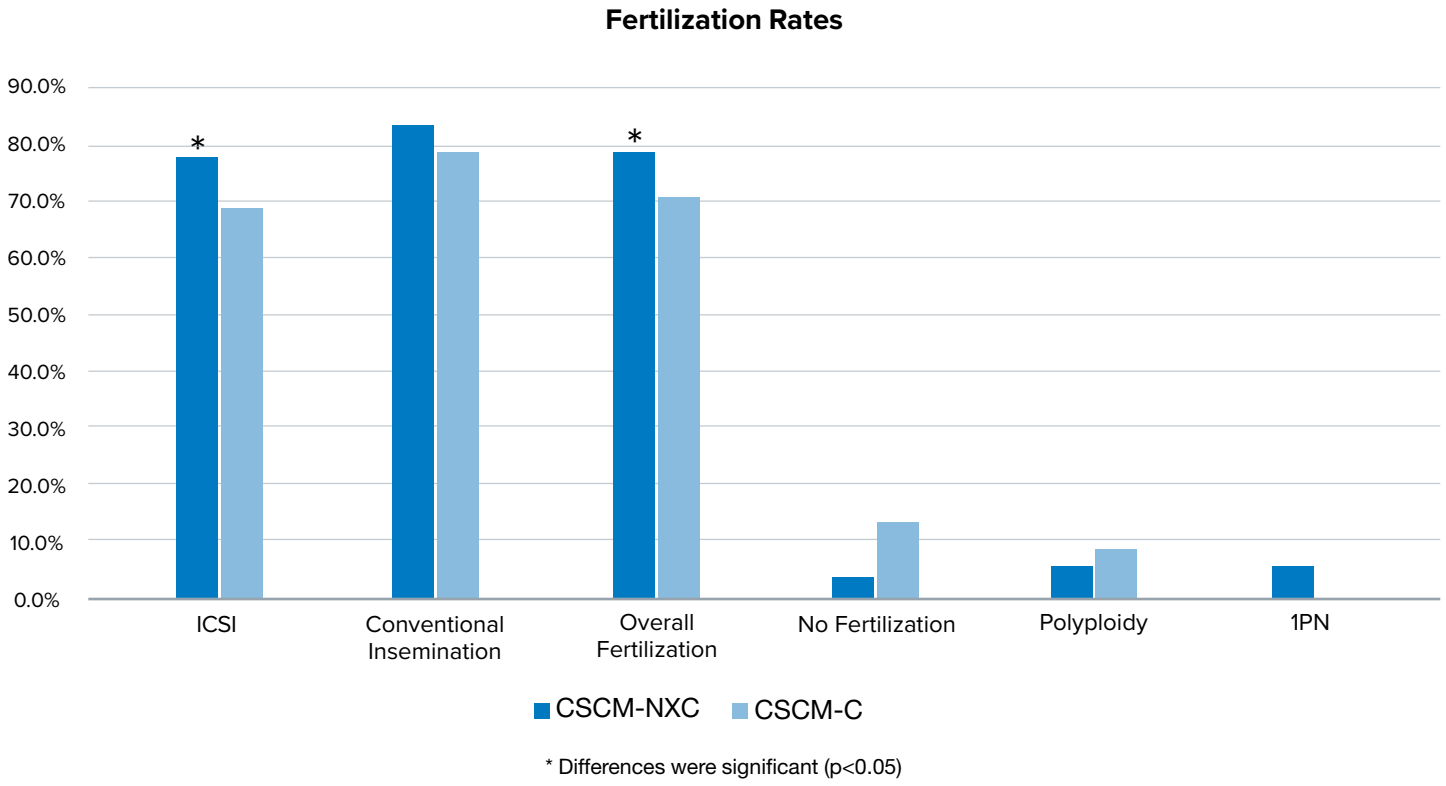


1 Gardner DK (1990)
2 White E (2017)
3 Internal data on file
4 Lane M (2000)

CSCM-NX Helps Reduce Stress on Embryo Development from Fertilization

Fertilization rates were improved when using a low lactate culture system from fertilization through blastocyst stage.[5]

Embryo Culture Media	ICSI Fertilization Rate	Conventional Insemination Rate	Overall Fertilization Rate	No Fertilization Rate	Polyploidy Rate	1 PN Rate
CSCM-C	69.0%	78.7%	70.8%	12.8%	8.5%	0.0%
CSCM-NXC	77.7%*	83.9%	79.0%*	3.6%	5.4%	5.4%

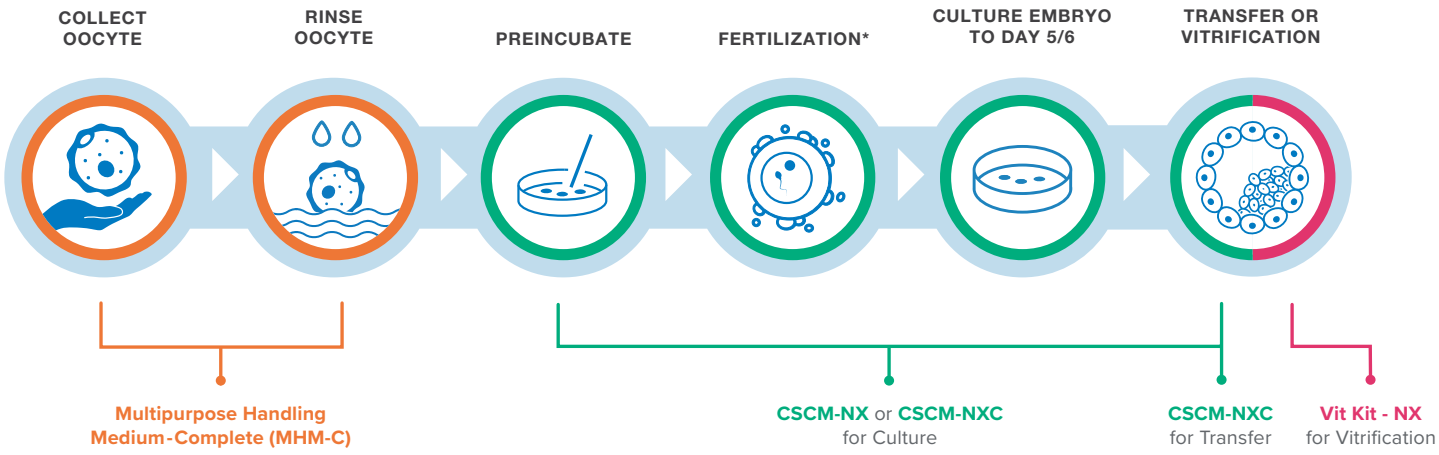


5 Benini F (2022)

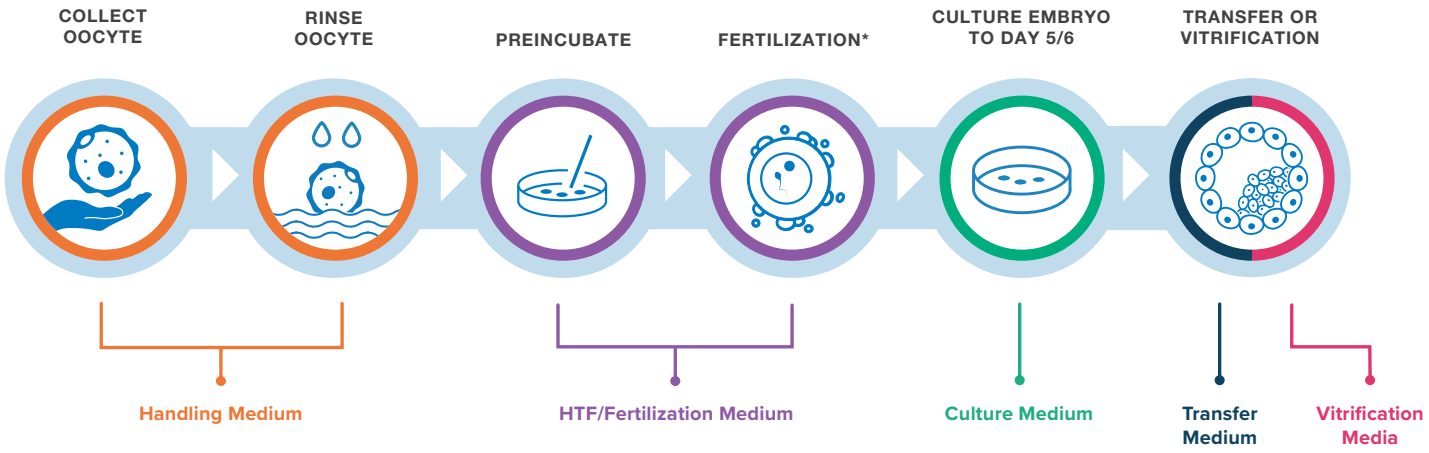
Unlock the Full Potential of CSCM-NX with the Day 0 Workflow

Introducing oocytes into CSCM-NX on Day 0 directly after identification, instead of waiting until after fertilization, maintains a consistent environment while eliminating dish changes and simplifying your workflow.

Day 0 with CSCM-NX



Traditional Method



*Dish must be changed after conventional insemination. ICSI performed per established lab procedure with buffered media.

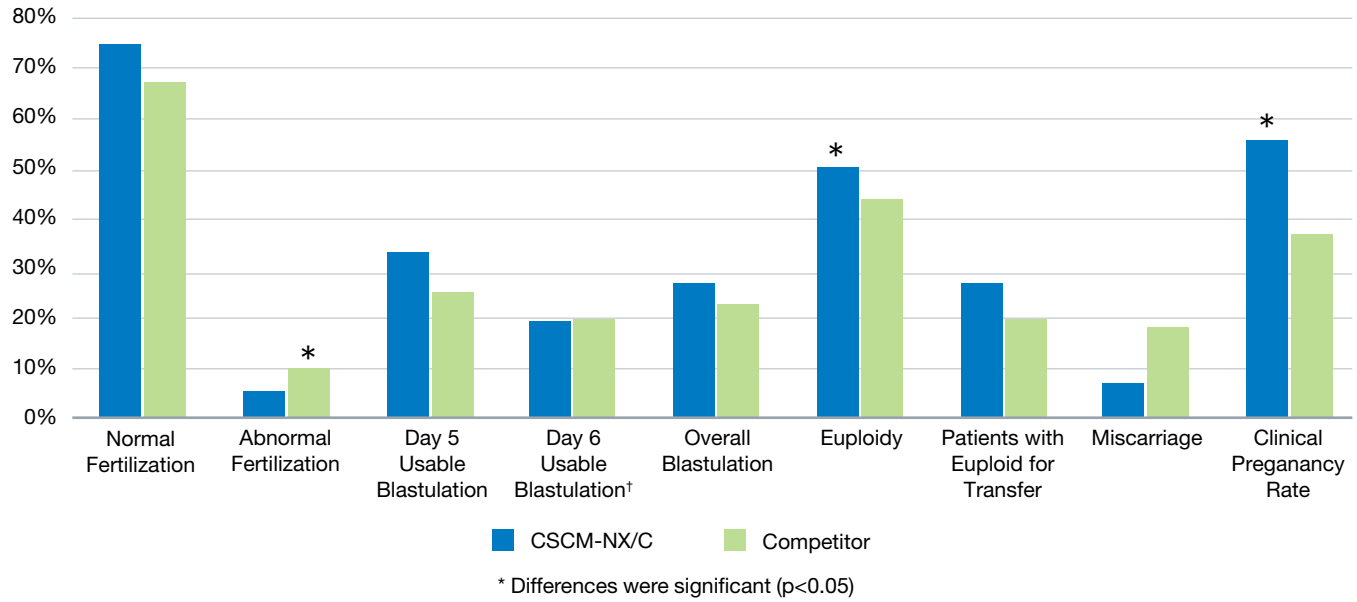
Better Results Start at Day 0

Studies show that when labs follow the Day 0 workflow with CSCM-NX, they see significant improvements in embryo culture outcomes.

- Overall higher Day 5 and 6 blastocyst utilization rate (BUR), even when accounting for patient age[5,6]
- Increase BUR in patient population >38 years old[7]
- Higher euploidy rate than CSCM[8]
- Improvement in clinical pregnancy and reduction in miscarriage rates[9]
- Increase in higher expansion grade blastocysts[10]
- Improved trophectoderm and inner cell mass grades[10]
- Reduced embryo discards[10]

5 Benini F (2022)
6 Manzo R (2022)
7 Hammond E, et al. (2020)
8 Whitney JB (2022)
9 Kobanawa M (2022)
10 Moreno Moya JM (2022)

CSCM-NX/C vs. Competitors

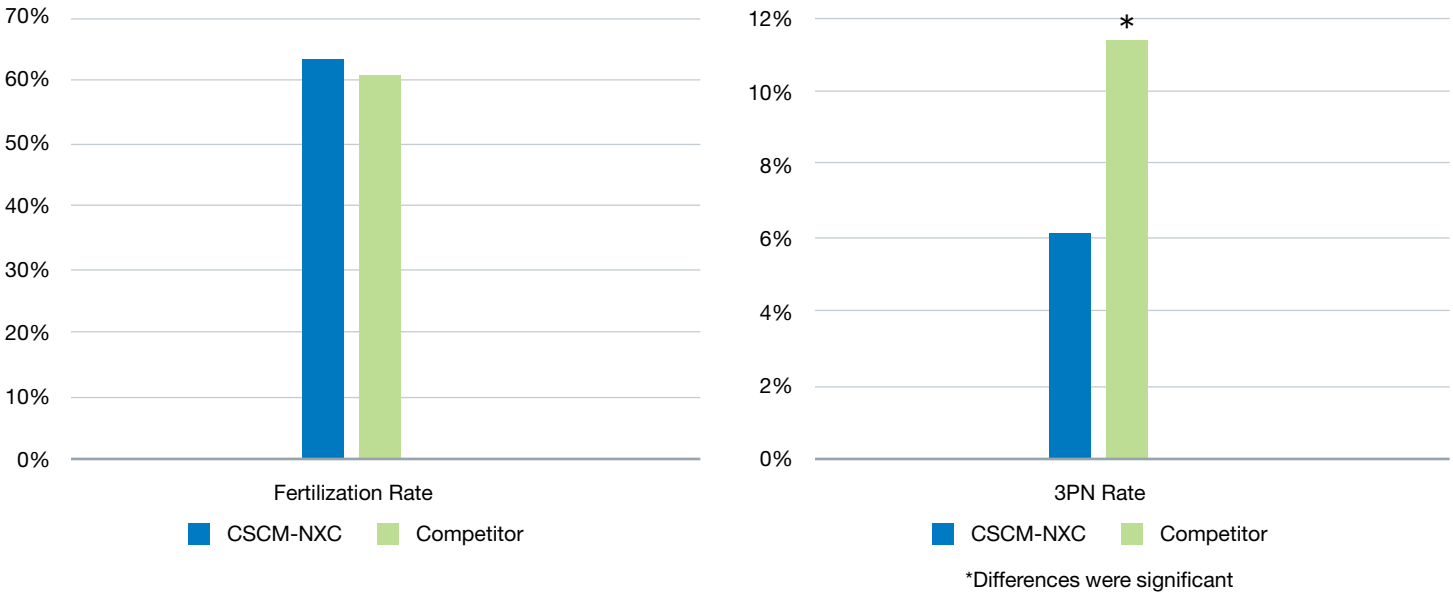


* Differences were significant ($p<0.05$)

† More usable blasts in traditional media on Day 6 due to higher BUR on Day 5 in low lactate media.
Results complied from clinical use data collected from 2020—2023.

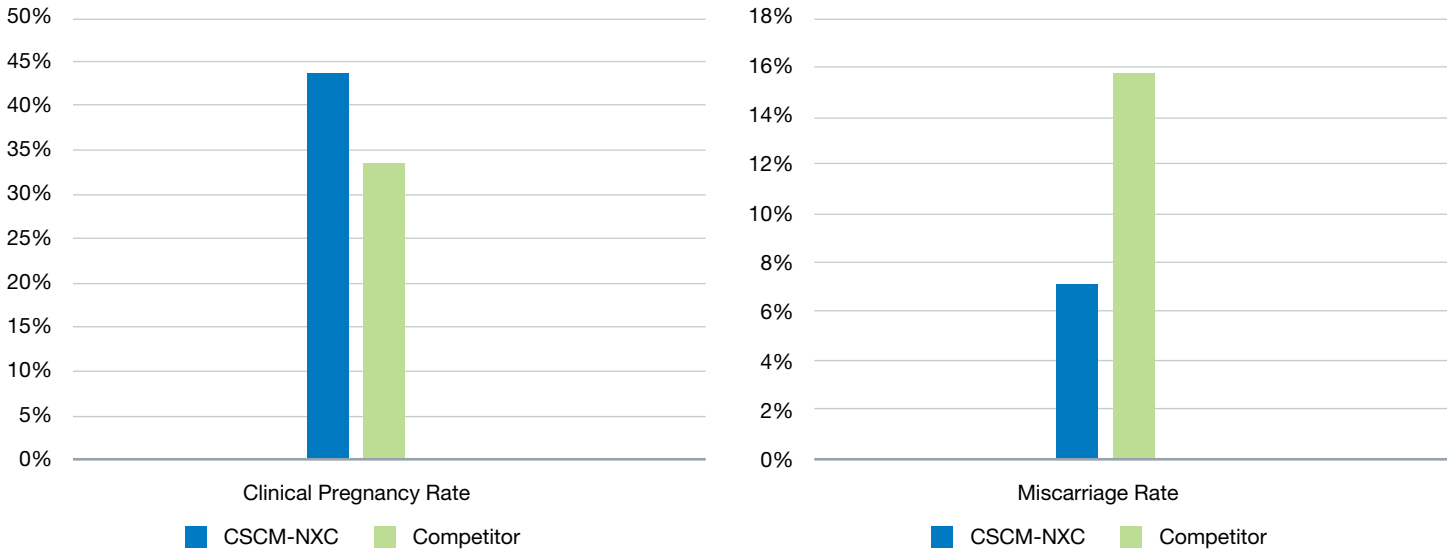
A peer reviewed study from 2022 showed improved results in fertilization rates, clinical pregnancy rates, and miscarriage rates when a low lactate media was used directly after oocyte retrieval.[9]

Fertilization Results



*Differences were significant

Clinical Results



"In using low lactate CSCM-NXC, in total, including pre-culture and for insemination through blastocyst culture, efficient energy metabolism can continue to promote good embryo development."[9]

Dr. Masato Kobanawa
Chairman and Director - Kobanawa Clinic

9 Kobanawa M (2022)

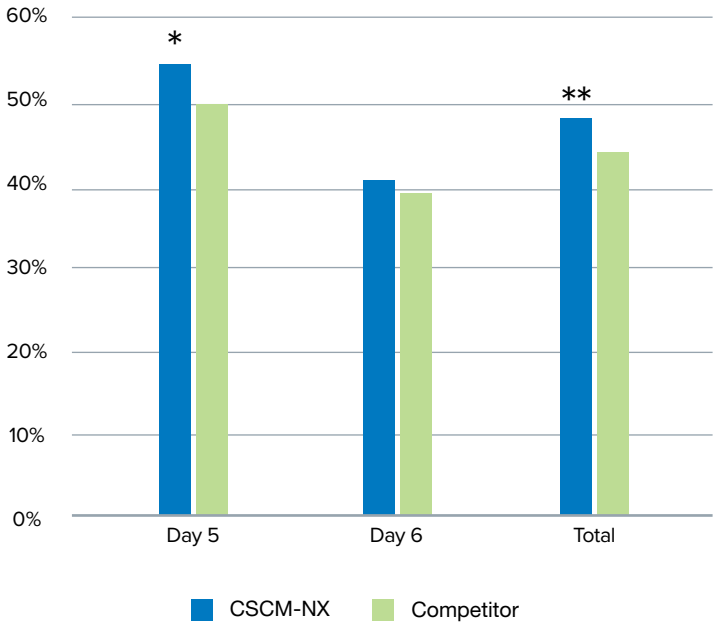
A prospective split sibling cohort study supports the use of a low lactate culture medium from the earliest onset of embryo culture.[11]

Embryo Culture Media	Immaturity Rate	Day 5 BUR	Day 5 Euploidy	Day 5 Mosaic	Day 5 BUR Fxn Euploid
CSCM-NX	13.9%	36.3%	76.9%	1.4%	27.9%*
Competitor	19.0%	30.5%	60.7%	6.3%	18.5%

*Differences were significant ($p<0.05$)

A 3.5 year follow-up study demonstrated that the improved euploidy rates continued in CSCM-NX against a competitor's sequential culture media and CSCM.[8]

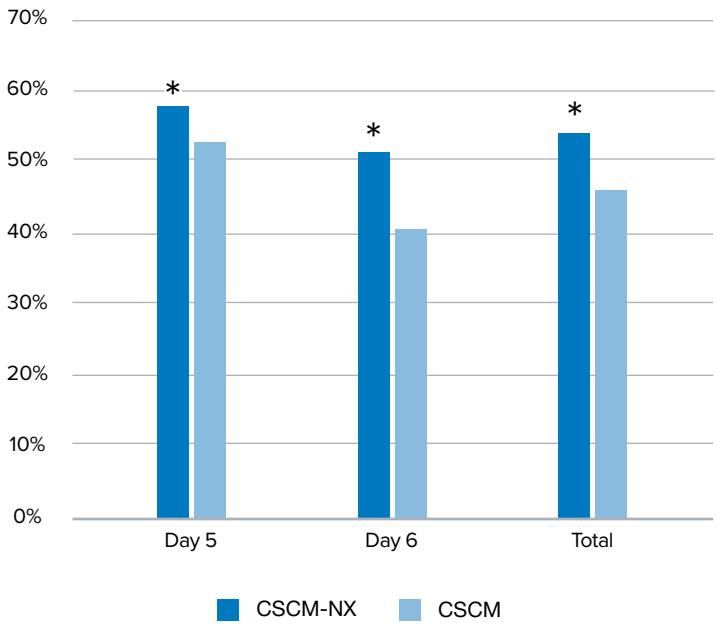
Euploid Percentage vs. Competitor



*Differences were significant ($p<0.05$)

**Differences were significant ($p<0.01$)

Euploid Percentage vs. CSCM

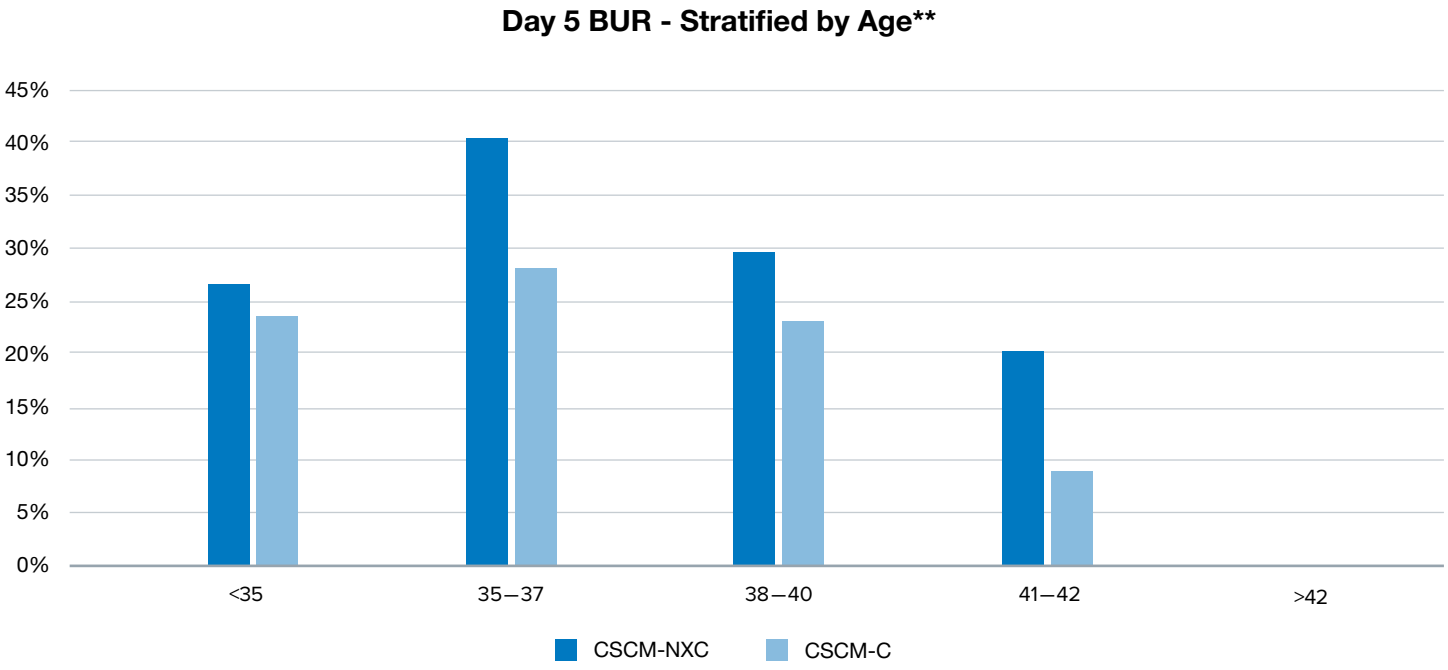


*Differences were significant ($p<0.001$)

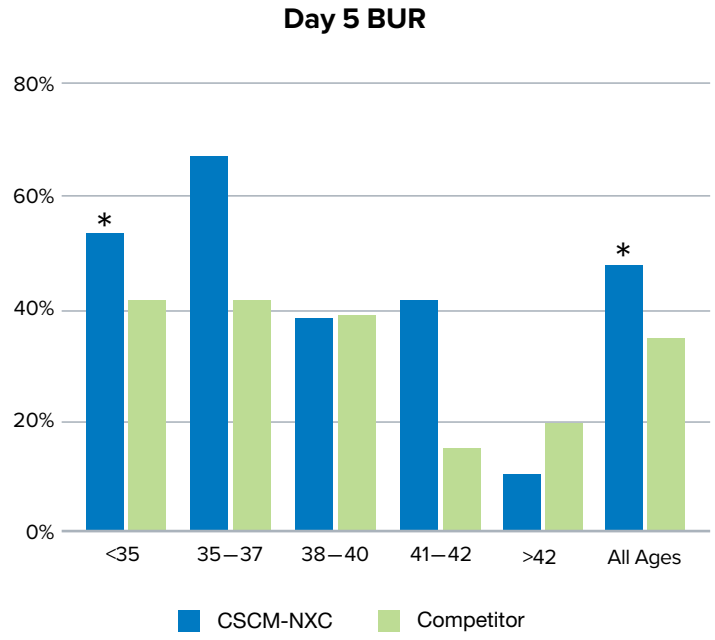
11 Brewer A (2023)

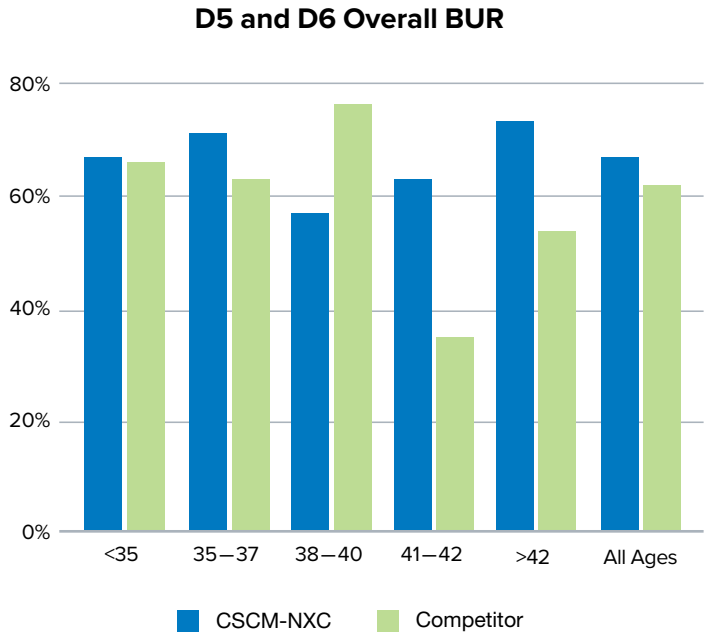
8 Whitney JB (2022)

CSCM-NXC improves Day 5 BUR versus CSCM-C.[5]



Additional studies also show increases across all age groups** when using CSCM-NXC versus traditional high lactate media.[6]





* Differences were significant ($p<0.05$)

**Age groups defined by the Society for Assisted Reproductive Technology (SART)

5 Benini F (2022)
6 Manzo R (2022)

CSCM-NX is trusted in labs worldwide

Make CSCM-NX and Day 0 a part of your IVF workflow.

Contact your local sales representative for more information or visit us at www.irvinesci.com to start your Day 0 trial today.

Simpler Processes.
Less Stress.
Better Results.

Ordering Information

Uninterrupted Culture Media

Item	Catalog #	Size	Additional Information	Shelf Life*	Storage
Continuous Single Culture-NX Complete (CSCM-NXC)	90168	2 × 20 mL 60 mL	Ready-to-use, pre-supplemented with Human Serum Albumin, for a final total protein concentration of 5 mg/mL. Phenol red free.	120 Days 4 weeks after opening	2–8°C
Continuous Single Culture-NX (CSCM-NX)	90167	60 mL	Requires protein supplement. Phenol red free.	120 Days 4 weeks after opening	2–8°C

Related Products

Item	Catalog #	Size	Additional Information	Shelf Life*	Storage
Heavy Oil for Embryo Culture	90189	100 mL 500 mL	Ready-to-use sterile heavy mineral oil overlay for small media volumes.	2 years 8 weeks after opening	2–8°C
Oil for Embryo Culture	9305	100 mL 500 mL	Ready-to-use, sterile, light mineral oil.	2 years 8 weeks after opening	15–30°C

*From date of manufacture

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3. Internal data on file
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8. Whitney JB, Watson L, Maizar A, VerMilyea M. Positive effects of low-lactate culture medium on embryo development and blastocyst ploidy status: a 3.5-year multi-clinic retrospective review. *Human Reproduction*. 2022; 37 (1). deac107.217
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