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# Posthumous Sperm Retrieval

## The Science

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# Summary

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- Background
  - History
  - Post Mortem Sperm Retrieval (PSR)
    - Techniques
    - Timing
    - Assisted Reproductive Technology
- Fertility North Experience



# History

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- Assisted Reproductive Technology (ART)
  - Artificial Insemination (AI)
  - Intrauterine insemination (IUI)
  - Intra-Cytoplasmic Sperm Injection (ICSI)
- Sperm Cryopreservation
  - Polge et al. 1949



# History

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## ○ Cryopreservation

- Sherman & Bunge, **1953**. Fertilizing Capacity of Frozen Human Spermatozoa. *Nature* **172**, 767-768
- Igboeli & Foote, **1968**. Maturation changes in bull epididymal spermatozoa. *J Dairy Sci.* 51:1703–1705.
- Successful use of human semen cryobanking for in vitro fertilization. *Fertility Sterility*, **1983**, Sep;40(3):340-3



# History

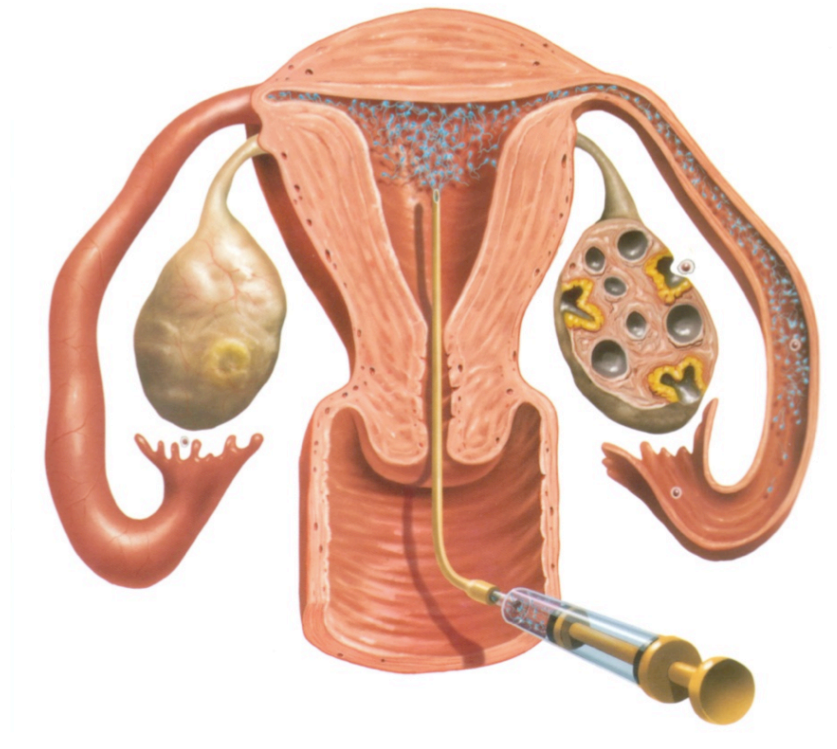
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- Artificial Insemination-
  - Lazzaro Spallanzani – **1780**
  - 19<sup>th</sup> Century- European Dog and horse breeders
  - 20<sup>th</sup> Century- USA- Cattle and Sheep breeders
  - Late 20<sup>th</sup> Century-
    - Infertility Treatment
    - Protection of biodiversity in endangered species

# History

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- Intrauterine insemination



# History

## ○ Kim Casali- **1977**

- Gave Birth to a son 16 months after the death of her husband from testicular cancer
- The pregnancy was the result of Intra-uterine insemination of her husband's semen in a fertility clinic in Cambridge , UK



# History

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- Intra-Cytoplasmic Sperm Injection (ICSI)



- Palermo G, et al, Pregnancies after intracytoplasmic injection of a single spermatozoon into an oocyte. Lancet. **1992**, 340: 17-18.
- Schoysman. Pregnancy after fertilization with human testicular spermatozoan. Lancet, **1993**, 342: 1237





## History

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- Rothman CM, 1980. A method for obtaining viable sperm in the postmortem state. Fertility Sterility, 34: 512.



# Assisted Reproductive Technology

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- **Sperm Retrieval Techniques**
  - Moribund-Electroelaculation
  - Post Mortem- PESA, TESE, vas irrigation, Orchidectomy



# History

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- Diane Blood
- Gaby Vernoff

# History

- Diane Blood-
  - Moribund SR- 1995
  - Births- 11/12/1998 & 2002



Diane

Liam born 1998

Joel born 2002

# History

- Gaby Vernoff-
  - PSR- 1995
  - Birth- 17/03/1999





# History

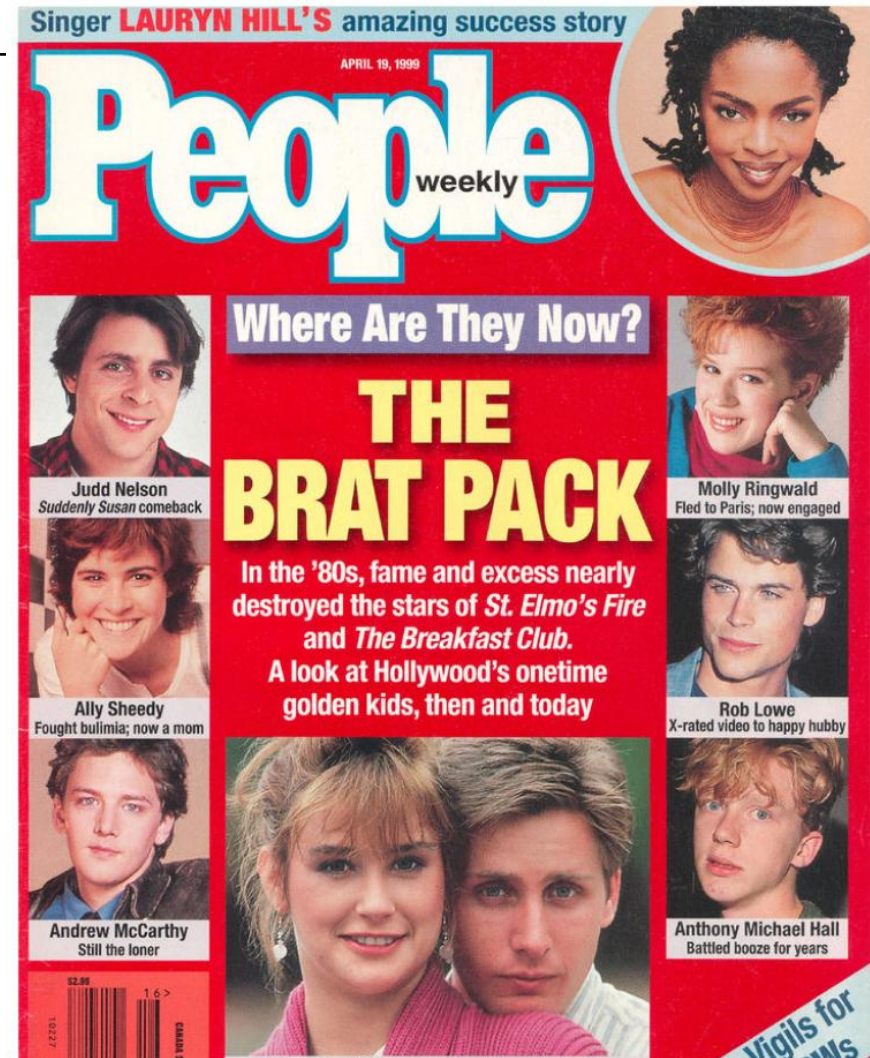
April 19, 1999 PEOPLE Vol. 51, No. 14

## Life from Death

By Richard Jerome

Four Years After She Lost Her Husband, Gaby Vernoff Gives Birth to the First Known Child Conceived with a Dead Man's Sperm

In a four-bedroom house overlooking Los Angeles, 2-week-old Brandalynn Danielle Vernoff gurgles, pokes out her tongue and utters several staccato cries. At this, her mother, Gaby, wraps her in a blanket and discreetly starts to breast-feed. It's a scene as old as humanity itself. And yet it is far from ordinary. For Brandalynn Vernoff is a living milestone: the first known child in the United States conceived with the sperm of a dead man. Her father, Gaby's husband, Bruce Vernoff, was only 35 when he died in 1995 from an accidental overdose of prescription medications. Thirty hours later, at the behest of Vernoff's grief-shattered family, a doctor extracted five vials of Vernoff's sperm and stored them in a sperm bank. Last June, using advanced reproductive technology, a team of specialists posthumously fertilized Gaby's eggs. The result: weighing 8 lbs. 5 ozs., Brandalynn arrived March 17, almost four years after her father drew his last breath. "I always think about Bruce, always," says Gaby, 31, who lives with his parents, Wally and Vidalia, who paid for the \$35,000 process. "I'm sad he's not here to enjoy our baby." Adds Wally, 69, an attorney: "The bottom line is we have a beautiful baby girl who, but for God and science, might never have been."





# Assisted Reproductive Technology

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## ○ **Timing**

- Animal studies
- Human case reports

# Fertility North Experience

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○ Jan 14th 2009

