

# NEWSLETTER

This newsletter centers on reproductive topics with a genetics focus. If there is an organization or upcoming webinar you'd like me to include in a future newsletter, please feel free to reach out at [genetics@modernreproduction.org](mailto:genetics@modernreproduction.org).

**Sign up for the  
newsletter  
here**

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## To Watch:

**TRANSLOCATION RISK  
CALCULATOR  
PRESENTATION**

Dr. Trunca and her team developed a calculator to assess the chance of miscarriage and ongoing, affected pregnancy for translocation carriers.

**On Demand**

**UNPACKING THE FDA'S  
NEW PROPOSED RULE  
FOR LABORATORY  
DEVELOPED TESTS**

**On Demand**

# NEWSLETTER

## *The little lit review*

1

### Telomere length: a marker for reproductive aging?

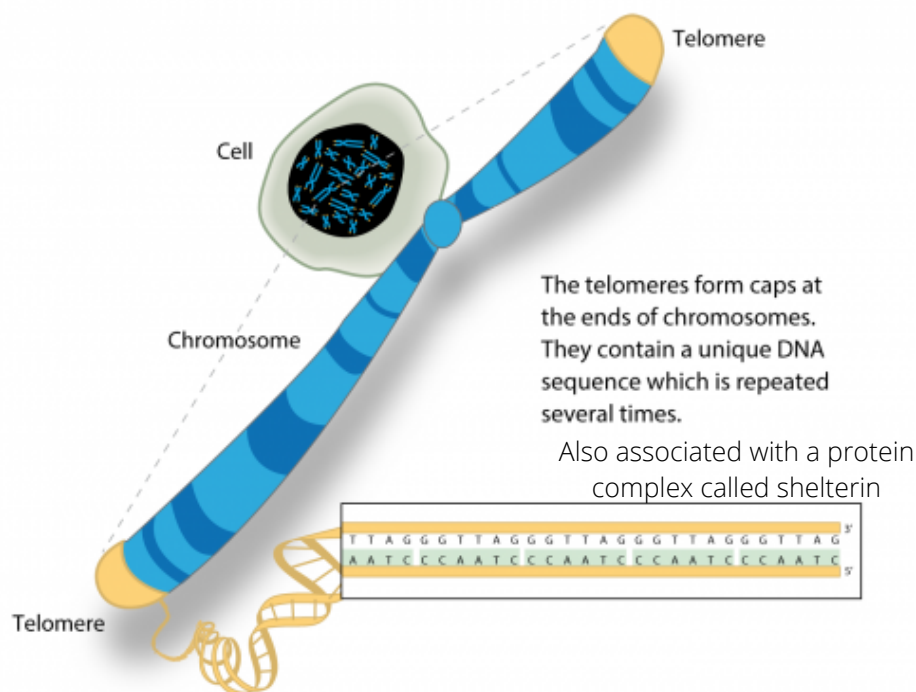
Paul Pirtea, M.D., David L. Keefe, M.D., Jean Marc Ayoubi, M.D., Ph.D., and Dominique de Ziegler, M.D., Ph.D

The authors emphasize the importance of having a reliable way to determine oocyte quality in order to determine the best treatment course of action. In this paper, they explore telomere length as a marker and the possibility of telomerase enhancing therapies.

More research is needed in this area. There are direct to consumer tests to evaluate the length of telomeres, but there are not interventions available.

Overall, it's more of a story of how important our environment and health impacts our reproduction. While every time a cell divides, the telomere gets shorter until it is no longer present at which point the cell dies. It can also shorten "from exposure to endogenous and environmental factors, such as reactive oxygen species (ROS), cigarette smoke, toxins, and chronic psychological stress."

Exercise may lengthen telomeres in oocytes. Overweight men have shorter sperm telomere lengths compared to healthy weighted men. So, eat healthy, exercise, avoid toxins and stress says the telomere this time.



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## *The tests that exist*

Instead of another article review, I wanted to highlight two tests that exist. When I say exist, it is not an endorsement of the test, rather to bring up that a group of individuals have come together to create the assessment and a lab has released it into the wild. The first being the infertility gene panel by [Igenomix](#) and the second is the assessment of autoantibodies found in the bloodstream of a mother to detect autism chances by [MARAbio](#). Infertility gene panel is an exciting option as not receiving a cause can be frustrating, among other feelings. I'd be curious to know the clinical utility of this test. Regarding MARAbio's evaluation, I learned about it via a [post](#) and from the concerns of autism advocates. \*I'm not sure if these tests are available yet in the US.

# 1

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Genomics Precision Diagnostic > Reproductive > REPRODUCTIVE INFERTILITY

## Infertility - 166 genes

Infertility is defined as the failure to conceive, regardless of the cause, after 1 year of unprotected intercourse.

Overview Indication Clinical Utility Genes & Diseases Methodology References

# 2

### Maternal immunity during gestation

**Prenatal exposure to maternal antibodies that bind to fetal brain proteins has been suggested as a mechanism for altering normal brain development**

In humans, immunoglobulin G (IgG) antibodies transfer at high concentrations beginning around mid-gestation as a mechanism to protect the fetus against pathogens. Under normal conditions, antibodies are unable to cross the blood-brain barrier (BBB) to access the brain. However, the BBB is more permissive during early brain development and thus permits maternal antibodies access to the fetal brain. **Prenatal exposure to maternal antibodies that bind to fetal brain has been suggested as a mechanism for altering normal brain development.**

### Maternal autoantibodies in autism

Several studies have led to the identification of eight Maternal Autoantibody Related Autism (MARA) antigens and their pathogenic antigenic determinants. The proteins were identified as collapsin response mediator proteins 1 and 2 (CRMP1, CRMP2), guanine deaminase or cytin (GDA), lactate dehydrogenase A and B (LDHA, LDHB), neuron-specific enolase (NSE), stress-induced phosphoprotein-1 (STIP1), and Y-box binding protein 1 (YBX1). Preclinical animal models have demonstrated these antibodies cause behavioral and structural brain changes in exposed offspring.

[Learn more](#)

# NEWSLETTER

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## Community Content:

Super excited for Fertility Out Loud's latest Youtube series on 4 couples' journey with infertility.



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## Modern Reproduction Content:

I think in the near future I will reorganize the blog - I'd like to highlight "guides" and primary topics above "secondary" topics. If anyone has suggestions of how to organize the content or any particular posts, please let me know :)

Welcome to the blog. The below are posts to discuss the relative topics in reproduction.

