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Glossary

embryo (n):

term for a fertilized human egg from 2-8 weeks after fertilization

estrogen (n):

a hormone that helps regulate menstruation. It is found in all human bodies.

decidualization (n):

referring to changes associated within the endometrial lining that help the uterus prepare for a fertilized egg's implantation

fertilized (adj):

referring to an egg that has successfully joined with a sperm

hormone (n):

chemicals found in the body that signal different processes

human chorionic gonadotropin (n):

a hormone that supports pregnancy by developing the endometrium and stopping menstruation

menstruation (n):

the processes of shedding the endometrium lining and an unfertilized egg, aka a 'period' or 'menstrual period'

oxidative stress (n):

an imbalance associated with too many free radical chemicals from strain on the body

progesterone (n):

a hormone that helps ready body for reproducing

Talk To Us

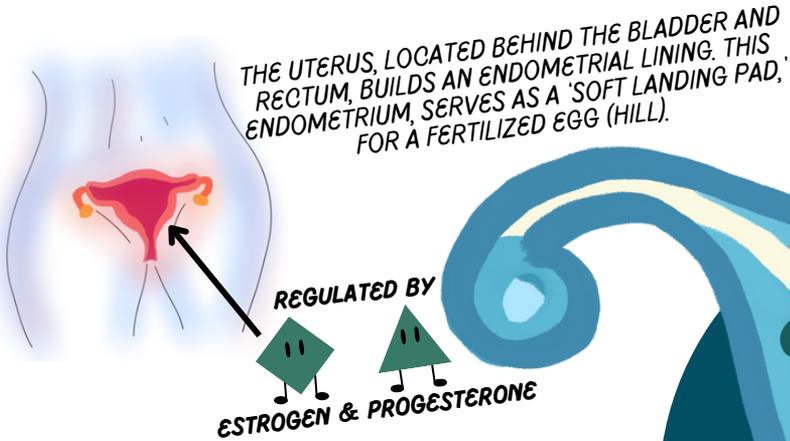
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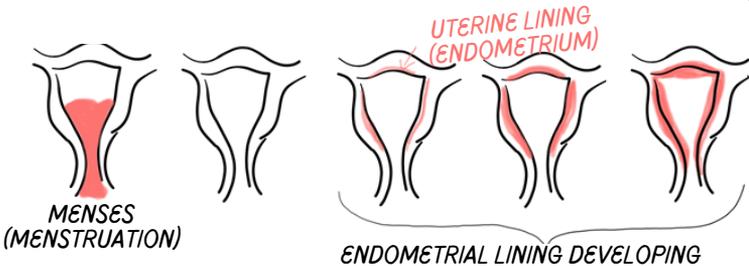
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Why do I bleed monthly?

Whether you are frustrated by the fact that menstruators have to “deal” with periods, or you’re just curious about your body, in this issue of Periodically we will take a dive into why humans menstruate cyclically. Let’s start off by understanding what menstruation is and what happens during this important time of the month.



Every 28 days, on average, the uterus builds up a **lining** of tissue on its inner surface, the endometrium, to prepare for a potential pregnancy.

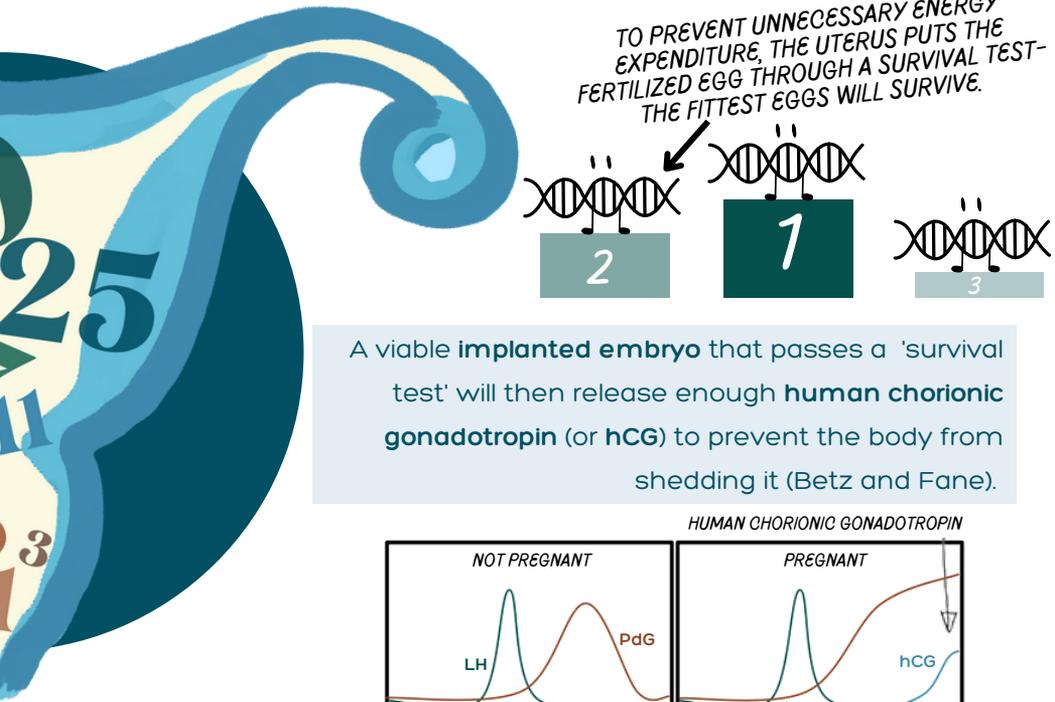


Every month that a viable fertilized egg is not implanted, the body gets rid of the egg and uterine lining through the process of menstruation (Planned Parenthood).

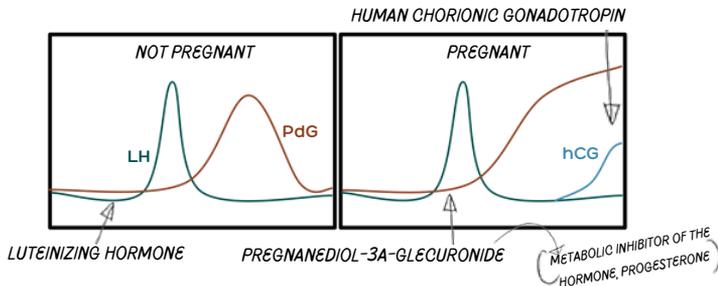
Scientists still do not have a definitive answer as to why we menstruate every thirty-ish days. However, there are a few theories to answer this question, with some being more probable than others (Emera et al.).

Under the evolutionary microscope, menstruation is very costly to our body's resources (think about the materials it needs to build up the lining, only to tear it down and get rid of it a few weeks later). So, there must be a good reason for why menstruating bodies have evolved to shed their endometrial lining every month. One theory that stands out takes us back to the primary goal of all organisms: passing down our genes!

While pregnant, mothers devote a significant portion of their body's resources to their child. These resources come at a loss if the **fertilized egg** is inviable.



A viable **implanted embryo** that passes a 'survival test' will then release enough **human chorionic gonadotropin** (or **hCG**) to prevent the body from shedding it (Betz and Fane).



Regardless of which theory is truly accurate, it remains true that menstruation is much less energetically costly than a pregnancy. As scientists continue to explore the question of why humans have evolved to menstruate as they do, it is paramount to stay on top of the newest research for the benefit of one's own health.

Leading Theories about the Menstrual Cycle

theory

explanation

likelihood

Sperm-borne pathogen removal



Shedding the uterine lining helps **remove germs** that may have entered from sexual intercourse

While a period can remove some germs, periods aren't based on sexual activity. Also, not all animals menstruate cyclically (like we do) but most still have sperm

Nonadaptive consequence of spontaneous decidualization

Menstruation is simply a **consequence** (or side effect) of the uterus building up the lining in **preparation** for a new pregnancy

This theory would still not explain the evolutionary benefit of menstruation.

Energy conservation



Menstruation is **less energetically costly** than continuously maintaining a lining until an egg is fertilized

No species continuously keeps up a lining, even ones that don't menstruate, so that's not an alternative in the first place. This also would not allow for sperm to reach the egg

Uterine preconditioning



Menstruation **prepares** the uterine tissues for the **inflammation** and **oxidative stress** that comes with pregnancy.

There isn't much, if any, evidence to support this theory or that menstruating protects against the stress of pregnancy.

Enjoyed what you read?

Check out these resources!

"Human Chorionic Gonadotropin" by Danielle Betz and Kathleen Fane

"Characteristics of the Endometrium in Menstruating Species: Lessons Learned from the Animal Kingdom" by Laura Catalini and Jens Fedder

"The Evolution of Menstruation: A New Model for Genetic Assimilation" by Deena Emera and others

"This Is Your Brain on Birth Control : The Surprising Science of Women, Hormones, and the Law of Unintended Consequences" by Sarah E. Hill

"What Is Menstruation? | Get Facts about Having Your Period"
by Planned Parenthood

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