The birth of the ECS

Which came first, the chicken or the egg?

A cell mutation occurred about 550 million years ago marking the emergence of animals with bones. This split also marks the birth of the ECS. A 2009 NY Academy of Sciences paper put it this way: “Indeed the endocannabinoid system is a very ancient signaling system, being clearly present from the divergence of the protostomian/deuterostomian.”

This divergence is the genetic marker between non-vertebrate and vertebrate species. Vertebrate reproduction is unimaginable without the egg. The proto/deutero split created cells that make eggs. Without this division there would be no chicken – which makes egg the answer.

Even though proof of the ECS exists in the fossil evidence, the Illinois General Assembly is still acting like a protostomian (spineless). I’m a veteran of the medical cannabis war in Illinois. I’ve seen how the system works: consciousness-raising, organizing, financing, testifying, debating, mediating and counting the final votes. All in the effort to show what seems obvious – that this is not just about cannabis. This battle has also demonstrated that the right to self-medicate is the same as the right to self-defense.

Dr. Benjamin Rush was a founder of our country, colleague of George Washington, and namesake of Chicago’s Rush University Medical Center. As a revolutionary he advocated for the constitutional protection of medical freedom. He was blunt: “Unless we put Medical Freedom into the Constitution, the time will come when medicine will organize into an undercover dictatorship.”

Of course that sounds awful – “an undercover dictatorship.” The exact words “Medical Freedom” did not make it into our Constitution as Rush wanted. Nonetheless, the idea is there in concept and principle. The right to self-defense is a principle and it logically includes defending one’s health. Citizens empowered to recognize new information regarding their wellness and able to act accordingly – that sounds like a working definition for medical freedom to me.

More recently, Dennis Peron advocated for the 1996 citizen’s initiative allowing medical cannabis in California. Peron is credited with the bumper-sticker worthy quote “All cannabis use is medical.” His point accurately presents cannabinoids as therapeutic and points to the ECS’s role in biology and the development of vertebrate life.

If all use is medical, meaning that herbal ECS supplementation has wellness aspects, then we should find supporting evidence in the science of human reproduction – and we do. A 2002 research paper noted these facts concerning the ECS: “Cannabinoid
receptors and/or AEA [anandamide] are present in mammalian reproductive organs including the testis, epididymis [sperm storage], prostate, ovary, uterus, sperm, preimplantation embryo and placenta, as well as prostatic and mammary carcinomas.”

Another study in 2002 found anandamide in the following “reproductive fluids”: human seminal plasma and mid-cycle oviductal and follicular fluids. And in case there is any doubt that the ECS plays a principal role in pregnancy, the same study reported: “Sperm are sequentially exposed to these reproductive fluids as they move from the vagina to the site of fertilization.”

Well? … All the way to the site of fertilization … that seems to be the moment of … conception.

Clearly by 2002 the scientific community knew of a connection between the ECS and pregnancy. Jump to 2010 and the work of a British Endocannabinoid Research Group. These white-coats used “a rapid, highly sensitive, specific and highly reproducible ultra-high-performance liquid chromatography-tandem mass spectrometry method” for the analysis of compounds that support the ECS. They found anandamide and “entourage compounds” in human bio-fluids including plasma, serum, breast milk and amniotic fluids.

Entourage compounds create an “entourage effect” and support the ECS without (always) activating cannabinoid receptors. The entourage effect acts by modulating the metabolism of cannabinoids, preventing them from leaving the active system. These compounds have unfamiliar and not easily pronounceable names like palmitoylethanolamide (PEA) and oleoylethanolamide (OEA) – but you probably can’t get pregnant without them.

With its vital role in pregnancy established, it’s apparent that a malfunctioning or deficient ECS would be bad. Hyperemesis gravidarum (HG) is an apt example. Pregnancy involves some nausea and vomiting. With HG, these conditions become pernicious and life-threatening for mother and fetus. In Women and cannabis: medicine, science, and sociology, there are testimonials from HG diagnosed women who supplemented with herbal cannabinoids – stories of effectiveness in alleviating the pernicious nausea and vomiting. Hearing their words I realized they were only defending themselves and the life inside them. Now I saw them as individuals using cannabinoids in self-defense and self-preservation – defending and preserving life.

Testimonials aren’t policy. Most state and federal laws work to keep citizen’s from ECS supplementation – yet the scientific evidence points toward supplementation. Someone today seeking to become pregnant – how could they ignore the evidence? How can we?

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**Search terms**

ECS entourage compounds and effect; ECS and the protostomian/deuterostomian divergence; hyperemesis gravidarum; anandamide; N-acylethanolamides; Dr. Benjamin Rush; Dennis Peron.

**Research and selected readings**

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