Two Primary Pathways for Early Embryo Recognition

- **Reproductive Signal:** A larger embryo produces a stronger signal to maintain pregnancy (more Interferon tau [IFN-\(\tau\)] that blocks PGF2a) – thus allowing the corpus luteum (CL) to stay.

- **Immune Signal from Diet:** EPA/DHA Omega-3s balance her immune response, reducing PGF2a, thus positively impacting embryo viability and maintenance.

From diet
- OMEGA-3 (EPA & DHA)

PREGNANT UTERUS
17 Days Post-Ovulation

Staples & Thatcher, University of Florida

The Fatty Acid Forum sponsored by
Impact of Omega-6 to Omega-3 Ratio on Prostaglandin Response  Mattos, et. al. 2002

Prostaglandin levels were measured after an oxytocin treatment to determine responses to different levels of omega fatty acids.

Cows fed a more balanced omega 6:3 diet with added omega-3s had a lower spike in prostaglandin release, improving environment for the uterus to maintain embryo.