



Neural mechanisms of social support in babies

How does “mother love” get inside an infant?

Background

Oxytocin (a small protein made in the brain) promotes **maternal care** of infants and is also present in breast milk, saliva, and amniotic fluid.

I. Are babies equipped to detect maternal oxytocin? Yes

We have identified **oxytocin receptors in the skin, mouth, and nose of the infant mouse**, indicating that babies have the capacity to detect maternal sources of oxytocin.

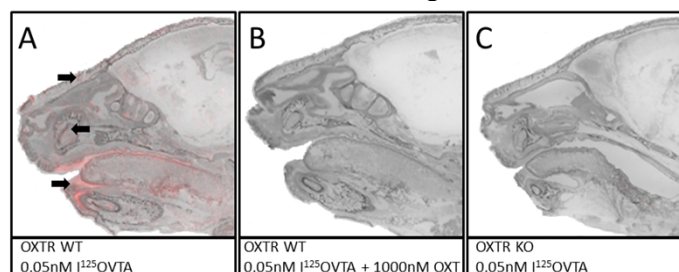
II. Could this signal detection go straight to the baby brain? Yes.

These oxytocin receptors appear to be located **on the ends of neurons** (i.e. cranial nerve V) **that connect directly to the infant brain**.

Future directions

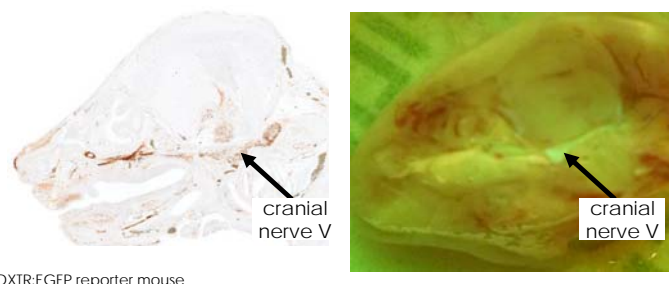
We will test our **novel hypothesis** that maternal oxytocin acts at these infant oxytocin receptors to **change the infant brain and affect infant social behavior development**.

I. Babies are equipped to detect maternal oxytocin.



Oxytocin receptor radioactive ligand binding: A) oxytocin receptor locations (digitally colored red) are evident in the skin, nose, and mouth of typical mouse babies. The strength of this evidence is enhanced because the red color can be chemically erased with oxytocin (B) and mice with a gene mutation that eliminates oxytocin receptors also do not show the red color (C).

II. Oxytocin receptors are on neuron fibers which send messages to the baby brain.



OXTR:EGFP reporter mouse

Summary & Future directions

