World massage conference

- Role of oxytocin in touch and massage

Kerstin Uvnäs Moberg, MD. PhD, professor of physiology

Collaborators

- Kerstin Uvnäs Moberg
- Maria Petersson
- Anne Marie Widström
- Eva Nissen
- Anna Berit Ransjö Arvidsson
- Ksenia Bystrova
- Wibke Jonas
- Linda Johansson
- Marianne Welandia
- Anne Sofie Mathiesen

Relaxed
Calm
Content
Happy
Peaceful
Warm
Open
Generous
Empathic
Friendly

Closeness
Trust
Loyalty
Giving
Receiving
Love
Unity
Increased curiosity
Increased binding to offspring and partner
Gastrointestinal tract high activity
Increased pain threshold
Decreased muscle tone
Reduced aggression
Decreased pulse rate and blood pressure
Decreased tail temperature
Decreased fear and calm
Increased social interaction

**Long-term effects of oxytocin**
- Anxiolytic-like effect
- Increased pain threshold
- Lowered blood pressure
- Lowered cortisol levels
- Increased vagal nerve tone (GI hormones)
- Facilitated learning (conditioned avoidance)
- Increased weight gain (females)
- Increased rate of wound healing

**Questions**
- Is there an “active” antistress system?
- Could innocuous sensory stimulation activate the antistress system?
- Could oxytocin be a mediator in the antistress system?
Human models for oxytocin release in response “touch”

Suckling
Skin-to-skin contact
Kangaroo care
massage

In the mother each breastfeeding session is initially followed by a release of oxytocin and prolactin and also by

- Calm and relaxation
- Decreased blood pressure
- Decreased cortisol levels
- Increased vagal nerve tone
- Feelings of relaxation and drowsiness
Breastfeeding is within days or weeks followed by:

- A sustained increase of vagal nerve tone
- A sustained decrease of blood pressure
- A sustained decrease of cortisol levels
- A sustained lowering of the scores of anxiety and monotony avoidance and increased scores of socialization in the KSP (an inventory measuring personality traits).
- Oxytocin levels and pulsatility correlate with the changes in the KSP.

Skin-to-Skin contact

Babies’ temperature in four sites of determination

Bivariate regression plot for mother’s axilla temperature 120 min post partum in the «Skin to skin» group (left) and in the «Nursery» group (right)
Breastfeeding is associated with:
- Pulsatile release of oxytocin
- Milk ejection
- Release of prolactin
- Lowering of blood pressure
- Lowering of ACTH and cortisol
- Increased levels of gastrointestinal hormones
- Decreased anxiety
- Increased Social behaviour

Skin-to-skin contact is associated with:
- Mothers
- Increased oxytocin levels, single pulses
- Increased variation in skin temperature
- Decreased blood pressure
- Decreased cortisol levels
- Decreased vagal nerve tone
- Decreased anxiety
- Stimulation of social behaviour
oxytocin release

- 1. Suckling, Pulsatile release (90 sec intervals)
- Release into the circulation
- Release from nerve terminals in the brain
- Release from dendrites, diffusion into the brain
- 2. Touch and warmth (less intensive stimulation)
- Release from nerve terminals in the brain?