

*Sex and Health*

In the short term, each sexual encounter includes an element of stress. But in the long run, a solid sexual relationship promotes feelings of increased security and decreased anxiety in the mating partners. The repeated bursts of oxytocin evoke the long-term effects usually associated with the calm and connection system. Through these effects, sexual activity has a positive impact on health by promoting nutritional balance, healing, and the restoration of biological resources. Statistical studies also indicate that secure, long-term sexual relationships contribute to a longer life span for males. (Women appear to have found other ways to provide themselves with oxytocin.) On the other hand, having sex with a stranger (in prostitution, for example) contains a certain amount of danger, something that the body registers by initiating a form of the fight or flight reaction instead of the calm and connection system. Then the healthful oxytocin-related effects of sexual activity are counteracted, or at least neutralized. It is therefore possible that monogamy and the cultural taboo against infidelity have, at least in part, a biologically adaptive basis.

## 12

*Oxytocin and Relationships*

We feel good when we're near people we like. Whether we are babies or grown-ups, physical closeness and touch provide us with a feeling of security, help us relax and calm down. It is not only the small child seeking a hug from mama or papa who needs physical contact; adults also need it in their relationships if they are to feel cared for.

People have known this since the time of Adam and Eve. But now, for the first time, science is beginning to find out what actually happens physiologically to make close relationships good for our well-being. It's not only the emotional experiences of love and security that make us feel good. Closeness and physical contact also activate physiological processes in our bodies in a way that is healthy for us.

*Bonding Relationships*

In experiments with rats, injections of oxytocin promote various kinds of physical closeness: maternal behavior, sex-

ual activity, and varying degrees of social interaction. The animals sit closer to each other, sniff each other, and groom each others' fur more often. These activities set in motion a positive cycle of effects and lead to increased secretion of the animals' own oxytocin, which, in its turn, promotes more interaction. With some species of animals, this dynamic results in what can be called bonding between individuals.

Although many animals recognize each other and develop a familiarity, only a few species of mammals are monogamous in the sense that the male and the female bond with each other for life. In contrast, it is important for all nursing animals to establish a strong two-way bond between the mother and her young; the species' survival depends on their ability to recognize and stay connected with each other.

With sheep, the hour after birth is extremely important for bonding between the ewe and the lamb. If they are separated during this sensitive time, they have more difficulty bonding with each other, and the ewe will often reject the lamb. After an injection of oxytocin, the ewe might accept not only her own lamb, even at a later time, but also the offspring of another ewe, and will develop a maternal relationship with them. We can thus conclude that oxytocin plays an important role in the bonding between a mother and her offspring, especially directly after birth.

This premise is supported by the results of another experiment: When an oxytocin antagonist was given to a ewe during the birthing process, her maternal behavior and the

bonding process did not develop. The same was true if she received a spinal anesthetic during delivery, since this procedure blocks the release of oxytocin. Oxytocin is thus fundamental to the first bonding in these mammals' lives. Only if the ewe and lamb can recognize each other and the mother lets the infant suckle will the next generation survive.

As I mentioned earlier, not only will female rats become motherly with the help of oxytocin but they will even take care of young rats they have never seen before. We have also seen that oxytocin is released in human females as a consequence of the newborn's first handling of the breast and first attempt to suck. This increased oxytocin is important not only for milk production but also for the development of a loving bond between mother and child.

Oxytocin is also an important factor in other types of bonding besides that of mother and child. If bonding is typical for a species, then high oxytocin levels increase the tendency of adult males and females to bond. A certain type of vole is known for creating stable pairings. When a female of this species is placed with a certain male while she is receiving an oxytocin injection, she later tends to prefer him even if she can have her choice of several other males. He becomes her "one in a million." Oxytocin thus facilitates bonding in mating as well as in parental situations.

### *Touch and Bonding*

Just as oxytocin reduces aggression and fear in rats, I believe that humans are more open to interpersonal contact when

oxytocin is involved. Touch and physical contact initiate a reinforcing cycle and produce increased secretion of oxytocin; this makes us more curious and interested in establishing contact, and, this in its turn, releases still more oxytocin, and so on. As shown in our animal experiments, a cycle is created that leads to the establishment of an emotional bond between individuals.

Caring for small children offers many possibilities for stroking and cuddling, and because of this they usually experience a great deal of parental touching. This sort of physical contact increases feelings of security and closeness between parent and child. Even though touch is not experienced so intensively later in a child's life, early handling in a warm and loving manner helps us approach later relationships with a continued sense of connection and trust. These later relationships marked by bonding and closeness are good not only for our emotional well-being but also for our physical health.

#### *Touch and Childbirth*

Most of us prefer to have physical contact only with people we know well. A woman in childbirth labor, however, is often glad to have a stranger rub her back or touch her in some other way. Studies of labor companions, known as "doulas," have shown that such support speeds delivery and reduces the experience of pain for women in labor.

A doula touches, holds, and supports a woman during labor, physically as well as mentally. Studies done by Mar-

shall Klaus and John Kennell, doctors whose research has influenced childbirth practice in U.S. hospitals, have shown that with this care, the need for pain relief is significantly reduced. Also, the mothers see the experience of labor in a more positive light. Recently, several studies have been published showing that the presence of a doula has long-term effects. Six weeks after birth, the mothers who had support from a doula have a better relationship with their infants, and also with their partners, than mothers who did not have this support. There are also fewer incidences of depression among these mothers. It is possible that an enhanced release of oxytocin, brought about by the combination of touch and close emotional support provided by a doula, is behind the beneficial effect on the progress of labor and the mother/baby bonding.

The results of these studies can be interpreted in a more general way. They demonstrate that openness to new and positive experience is substantial when levels of oxytocin are high, as they are during labor. Under such circumstances, it seems that loving and nurturing care can influence the individual in a very deep and sustained way. Perhaps touch, warmth, and support induce changes in the brain similar to those that are induced by repeated administration of oxytocin in animal experiments. In any event, these studies show that important positive psychophysiological changes can be induced without drugs.

As we will see in Part 5, there are many nonmedical ways of bringing about these effects. It is possible to elevate oxytocin levels in both men and women by giving a combina-

tion of stimuli such as warmth, touch, massage, rhythmic motion, and supportive and friendly psychological feedback. The lessons we have learned about the importance of caring support in childbirth may be useful in other types of therapeutic situations.

### *Touch in a Variety of Relationships*

When we are sick or in need, we are calmed by the touch of a doctor or nurse, even one we do not know. To have our hand held or to be stroked or even hugged by a caregiver, even if we have never seen the person before, often feels entirely appropriate when we are not feeling well or are in some other way vulnerable. Studies have also shown that a nurse's touch lowers the pulse rate in an acutely ill patient, even though it raises the pulse rate in a healthy person.

Generally, however, touch is associated with close relationships between people who already know each other. You show your feelings with touch and convey information without words, often without thinking about it. You pat your friend encouragingly on the shoulder to show that you believe in him even if no one else does. When you are with your lover, you tenderly caress his naked back without thinking about it. You stroke the silken cheek of your small child and hold her by the hand when the two of you are walking together.

Types of touch differ in close relationships, whether of parent and child, siblings, sexual partners, or friends. Since we now know that touch and physical contact cause the

release of oxytocin, we can feel confident that a relationship between two people that includes mutual pleasant touch not only creates an emotional bonding but also transmits the positive health and antistress effects of oxytocin.

It is as important for survival to be able to be close to someone as it is to be able to defend yourself against someone. Just as we have many culturally acceptable ways of expressing aggression and boundary setting, we also have various standard ways to promote the release of oxytocin through bodily contact. Most families engage in physical contact, which occurs between parents and children and between siblings, even up to adulthood. Strong bonds between friends are often expressed through hugs and kisses. Though this may sometimes be ritualized as "blowing kisses," the message remains that bodily contact is an integral part of a safe and friendly relationship.

Even workplace colleagues or team members in sports feel a kinship and group identity that can be expressed through touch and promoted by physical contact. Think of a cheering team rushing a goal scorer and nearly fighting over who gets to hug him or her! Sometimes, touch outside the private sphere is a significant means of creating connection and trust. One interesting experiment studied the check-out process in a library and found that borrowers who had been lightly touched by the librarian returned their books at a much higher rate than those who had not been touched. This light contact created an emotional connection that encouraged the borrower to return the book. A person who is touched is more likely to honor a promise.

We feel a connection as well with someone who gives us a facial treatment, a massage, or a pedicure. These modes of touching often promote a sense of closeness; we may even be inclined to unload our troubles onto a person toward whom we have developed such feelings.

Of course, there are wide cultural differences in acceptable forms of touch. Studies have shown that the French touch each other more than Americans would in the same situations. It is possible that this cultural difference may be correlated with certain differences in health and illness.

#### *Psychological Contact*

Relationships and encounters can give us the experience of touch on a psychological level, even without bodily contact. A meeting or a communication with another person can be experienced either as warm and supportive or as chilly and demanding. Someone who listens attentively to us gives us a feeling of confidence and connection, just as a friendly touch does. Our perception of a relationship, the way we experience it, determines to what extent our fight or flight reaction or our calm and connection response is triggered. The situation will then bear the stamp of either vasopressin or oxytocin.

A relationship is difficult and can be destructive if its signals are ambiguous or unclear, especially if the situation should offer security but does not, as in domestic violence or child abuse. A less common turn of events is the rela-

tionship that changes from threatening and antagonistic to comforting and friendly.

#### *Absence of Touch*

We customarily regard the stress of separation as unhealthy. Such stress can lead to illness, in part because of its connection to the hyperactivity of the sympathetic nervous system. A separation from someone we are close to, whether it is voluntary or involuntary, has powerful stress effects. There are demonstrable connections between separation and illness, including statistics that show that a person who has recently lost a spouse runs a greater risk of becoming sick. The related effects, such as elevated blood pressure, a rapid heartbeat, disturbances of heart rhythm, and an increased tendency for the blood to coagulate, can produce cardiovascular disease and stroke (bleeding or blood clotting in the brain).

An important part of the stress of losing a personal connection through death or separation may be the sudden loss of touch and consequently of many of the effects that closeness and warmth generate. When these healthful stimuli disappear, the risk of illness grows.

#### *Healthful Effects of Good Relationships*

The oxytocin that good relationships produce is our personal healing nectar. Several studies have shown that posi-

tive personal relationships are conducive to a longer life. People who reported that they had good relationships in general were also healthier, the males especially showing a lower incidence of cardiovascular disease. The reverse is also true; if a woman experiences her marriage as negative and stressful, cardiovascular disease worsens.

These relationships do not need to be intimate to be good for us. Even affiliations with groups and communal activities can have a positive effect on health. Sports and competitions can have these effects, but they also can be filled with stress and disappointment. We can deal with this kind of challenge occasionally, but when it becomes a chronic condition, it can have negative consequences.

Friendly relationships with animals also promote health. Dog owners, for example, have lower than average blood pressure, perhaps because of the exercise they get from walking their dogs as well as the touch and physical contact that the relationships with their pets include. Even some people with psychological illnesses such as schizophrenia have shown an improved ability to interact socially when they live with a dog or a cat. Perhaps children's chores with animals—currying horses or caring for rabbits, for example—can have a positive effect on their health and social skills, although these findings are still speculative.

#### *Relationship to a Place*

Can the calm and connection reaction be triggered by other circumstances that do not necessarily include contact with

### OXYTOCIN AND RELATIONSHIPS

1. Touch releases oxytocin in animals and probably also in humans.
2. The release of oxytocin creates emotional bonds between people, such as mother and child.
3. Good relationships are important for health, especially with respect to diseases of the cardiovascular system. Breast cancer survival has also been shown to be longer in women with close relationships.
4. Good relationships probably stimulate the calm and connection system, not only through touch but also through feelings of support, warmth, and love.
5. Even certain places that we "have a relation to" can have a calming influence, probably by activating the oxytocin system.

living beings? Young animals appear generally calm and secure in their nests or cages even if the mother is not there, because the information they get through their senses of sight, hearing, smell, and touch is "right" and feels like home. Perhaps their oxytocin is released because these messages *remind them of mama*, just as the nursing mother's oxytocin is released when she hears her child's cry or as the cow's milk begins to run when the farmer rattles the milking machine. This kind of stimulus can cause the release of oxytocin through a conditioned reflex.

In the same way, home, especially a childhood home or hometown, can have a calming effect on people in a way that may be linked to the physiological system described in this book. This type of home is not associated with an absent mother, but with the positive experiences of calm and security that we learn to connect with it. Many people return to live in their hometowns when they are growing older, perhaps because they feel more secure there than anywhere else. It is also well known that people who, because of old age, are forced to leave their homes of many years often decline both physically and mentally as a result of this separation. A patient, especially a very sick one, experiences home care as less stressful than receiving the same care in a hospital, because a familiar setting is calming.

PART FIVE 

The Ways We Seek  
Calm and Connection