1 BODY PARTS

Who Has What and How It Works

Myth #1

Bigger Penises Are Better

How many jokes have we all heard about how much "size matters?" And how many retorts "It's not the meat, it's the motion?" There are so many penis jokes and so much bragging, it isn't funny. No, it really isn't. Because the fact is that men with smaller penises worry that they will not be virile enough, it may make them avoid sexual interaction or even peeing in a public urinal, and, even more importantly, some of those men will buy various fake products that will supposedly make them longer, stronger, or wider. Distraught men may even opt for surgery, and these implants can cause nerve damage and even impotence. Even if successful, these are serious operations which include cutting the suspensory ligament, followed by weeks of traction that include hanging weights on the penis (Vardi *et al.,* 2008). This results in added length, but only in the flaccid state! (So who is this operation really for? Could it be really to see other guys enviously ogle the longer penis in the men's room?) Attempts to add girth have even more problems, often resulting in uneven distribution of the added fat tissue which can have an overall lumpy effect. Most men who have the procedure are not happy with the result (Li *et al.*, 2006).

So How Big Are They Usually?

There are differences in penis size. There are wide ones that are short, long, and in between. There are long ones and short ones of different girth. The best study on penis size (Wessells *et al.,* 1996) found that the mean size of flaccid penises was about 3.5 inches and about 5.1 inches erect. When they measured against the pubic pad, it was about 6.2 inches. Mean circumference

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of the erect penile shaft was about 4.8 inches. Two-thirds of the men were within 1 inch of these measurements. Other studies also arrive at similar measurements (Templer, 2002). Interestingly, these studies found no correlation between the flaccid and erect state, so next time you sneak a glance at the guy at the next urinal just remember—you don't really know much.

There have been quite a few studies searching for whether a man's height has any positive correlation with penis size. Taller men certainly *think* their penises are bigger. An internet survey of 52,031 heterosexual men and women found taller men estimated they were larger while shorter men estimated they were smaller (Lever *et al.,* 2006). They may be right. Researchers in Iran actually studied the external genital dimensions of 1500 men and concluded that length had a significant positive correlation with height (Mehraban *et al.,* 2007). A study from the Department of Urology through the Athens Naval and Veterans Hospital measured 52 men under 40 and found that the penile shaft length, and total length, was correlated positively to height (Spyropoulos *et al.,* 2002).

Body mass also has had some correlation with penis size but most researchers feel that the correlation is because the penis of obese men retreats under the belly and so seems smaller than it is. Ultimately, researchers conclude that "fat level is a good predictor of when a man rates his penis as small versus large" (Lever *et al*., 2006, p. 135).

People often joke that the larger the hand and feet the larger the schlong, but that doesn't seem to be the case. Urologists at St Mary's Hospital and the University College Hospital in London studied the stretched penile length of 104 men and found that there was not a "statistically significant relationship between stretched penile length and shoe size" (Shah and Christopher, 2002, p. 586). No one else has found such a link either.

While hands might not tell us anything, it turns out that the index finger can. The study of Iranian men found a positive correlation between the parameters of an index finger and the size of a man's penis (Mehraban *et al*., 2007). Another study on a small sample of men found the same thing (Spyropoulos *et al*., 2002). Voracek and Manning (2003) offered an explanation for this: "Homeobox (Hox) genes regulate limb development, including fingers and toes, as well as urogenital system development, including the penis. Therefore morphological patterns of the fingers may be related to morphological patterns of the external genitalia" (p. 201).

So there may in fact be some physiological continuities that can predict larger penis length. We think the better question, however, is why is everyone so interested? Are there really any differences between big penises and small when it comes to sexual satisfaction?

Does Size Really Affect Pleasure?

Well, there are two ways to look at this: what's in your head, and what's in your body. Physiological research refers to how effective different sized penises might be in terms of women's likelihood of orgasm and enjoyment of

sex. Psychological factors refer to how mentally or emotionally or even aesthetically important size is for a woman's pleasure and/or likelihood of orgasm. A number of studies have taken a look at both. Let's look at heterosexual data first.

Masters and Johnson, the famous sex researchers whose work on sexual functioning in the late 1960s and 1970s jump-started the whole field of sexology and sex therapy, looked at hundreds (maybe thousands) of heterosexual sexual acts and concluded that size was irrelevant or a minor factor in women's sexual pleasure. Their research has been replicated numerous times (Masters and Johnson, 1966; Zilbergeld, 1999; Fisher *et al*., 1983). The main reason they felt sexual arousal and orgasm were unrelated to penis size was because the vagina is such an accommodating space that, in general, the walls of the vagina grab the penis and conform to its size. The authors do note that women and men might not feel this grabbing at all times during sex because during the excitement and plateau phase of the sexual arousal cycle the bottom part of the vagina "balloons" (perhaps to capture semen more efficiently). At times of extreme arousal, the vagina could feel looser or the penis not quite as fulsome.

Though the popular media may suggest that women want bigger and wider penises, the research tells a different story and points to men being a lot more worried about penis size than women are. A large academic internet study found that while 55% of heterosexual men were happy with their penis size and/or girth, 84% of heterosexual women were happy with their partner's penis attributes. Only 14% wanted something bigger (Lever *et al*., 2006). An older study by Zilbergeld was particularly conclusive about women's subjective opinion: out of 426 non-virginal women, not one mentioned that penis size was important (Fisher *et al*., 1983).

More recent studies have also gathered some interesting results. Eisenman (2001) asked 50 women about the importance of penis size; 45% felt more width felt better, while only 5% responded positively to greater length. A European study asked a number of new mothers about their partner's penis size and sexual satisfaction and only 1% of them mentioned length as a positive addition to their enjoyment. The majority found penis length either unimportant (55%) or totally unimportant (22%). A number of women said that they thought length was less important than girth, but only 1% mentioned girth. On the other hand, an additional study by the same researchers did find that one out of three women mentioned size and/or length as being important (Francken *et al.,* 2002). In a 2006 article based on a 1998 study of 556 women in Croatia, girth was found to be more important than length but still only 12.8% of the sample rated either girth or length to be very important to them. However, when the authors limited their analysis only to the most sexually experienced women, a different story emerged as more of these women thought that penis size was important (Štulhofer, 2006).

Interestingly, how a penis appears was important to women in this study as 26.9% of sexually experienced women said that the appearance of their partner's penis was very important to them and 44.9% said that it was

somewhat important. In fact, only 18.2% said aesthetics of the penis were totally unimportant. It is interesting that in these studies women have strong aesthetic preferences but lesser physiological ones.

Where does that leave us? Well, heterosexual men are clearly getting feedback that makes them worry about their penises. But, despite the pervasiveness of this myth, it seems rare that this feedback is truly based on size. Most importantly, there is certainly no credible information that penis size determines satisfaction in heterosexual relationships.

Is This Different for Gay Men?

Male sex workers advertise their wares according to size and gay male models in sexually explicit material seem to be chosen for the size and girth of their penises. In sexy gay cartoons, the guys are always hung. No wonder gay men worry about penis size—it seems to be a particularly widely held obsession in gay America. But does it matter in gay relationships?

Well, to some extent, what people believe to be real, is real in its consequences. (A saying first noted by W.I. Thomas, an early sociologist.) The aesthetics of penis size in the gay world has been so extolled that it would be odd if it didn't affect how a gay man felt about his equipment! But does it really make a difference in sexual satisfaction?

Certainly some men think it does. But are gay men who have partners with small penises more likely to stray or more likely to be sexually unfulfilled? We did not find any data on this topic in same-sex relationships so we are not sure if there is any consequence in a relationship one way or the other.

Why Do We Confuse Bigger Penises With Better Penises?

We think there are two reasons. First, the whole world seems to think bigger is better in just about everything from a hamburger to a house. Certainly, there are status points for having a big house—we know that it cost more and the person who builds or buys an elaborate estate is definitely trying to tell the world they are a big deal. Whether or not that house is pleasant to live in may be an entirely different matter. Bigger penises come from the same thought pattern. Of course we know that bigger isn't always better in everything. Look at the extraordinary weight gain that has accompanied larger bagels, enormous steaks, and super-sized French fries. In fact, a big penis may be painful to some women, dangerous in vigorous anal sex to either a homosexual or heterosexual partner, and may actually be softer because very big penises can have some problems distributing enough blood to be "rock hard."

The second reason we think bigger has been confused with better is because for the most part only huge penises are used in porno movies. We

think they are used so that the male watcher can identify and feel powerful by association. But of course, another comparison may lurk in his head: "My penis doesn't look anything like that—maybe I am not capable of being that sexy!"

Obviously, individuals will have their preferences but the data swerve sharply toward penis size being irrelevant except for a small proportion of women who like the aesthetics of a larger penis and those gay men who are hooked on size as an erotic trigger. Most of us, however, are fine with the penis in front of us and get all the sexual satisfaction we need from other elements of our partner and our relationship.

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Myth #2

Vaginas Are Dirty, Ugly, and Smell Bad

In the 1980s there was a series of television commercials that all began the same way; with a mother and her 20-something daughter going through some daily activity—like walking the dog or driving in a car. The daughter would suddenly become very serious, look at her mother intently, and say "Mom, do you ever get that not-so-fresh-feeling?" Despite the fact that the daughter never mentioned that this vague feeling had anything to do with her vagina, her mother would recommend a Massengill douche (or maybe it was Summer's Eve, we don't quite remember). The daughter would look relieved and invariably the clouds would part and the sun would shine. That "not-so-fresh-feeling" became the punch line of jokes for many years.

We haven't seen these ads for a while but there are certainly still commercials that advertise douches, special soaps, feminine hygiene wipes, and vaginal deodorant sprays. And maybe we haven't come that far as many of the current ads talk about embarrassing odors and the need for special products to take care "down there." These commercials are designed to sell products (products that nobody needs but we will get to that later) but in doing so they perpetuate the idea that the vagina is dirty and smells bad. Moreover, in doing so without ever using the words vulva or vagina, these ads perpetuate the idea that this is an area of the body that is so embarrassing, we can't even name it. (Unfortunately, in some ways this is true, many people—both men and women—can't name it because they don't know the right words or mix up which part is which.)

The end result of an industry that sells unneeded products and a society that can't or won't use proper language is that many women feel ashamed of their genitals, which can negatively impact their sex lives. Women have also begun to alter the appearance of their genitals; some by removing all or some of their pubic hair and others by undergoing painful reconstructive surgery to "normalize" the appearance of their genitals.

What's Where and What to Call It

Before we can successfully debunk the myriad of myths that surround the female genitals, we have to start by talking about the female genitals themselves. Forgive us if this is a repeat of something you've learned in an anatomy class or a human sexuality course (or, if we had our way, a fifth grade puberty class) but we think this bears repeating. The external female genitals are made up of a number of different parts. The *mons* or *mons pubis* is the pad of fatty tissue that covers the pubic bone and is naturally covered in pubic hair after puberty. The *labia majora* and *labia minora* are the outer and inner lips, respectively. The labia majora are also covered in pubic hair. When these lips are pulled apart they reveal the *clitoral hood*, the *clitoris*, the *urethral opening*, and the opening to the vagina. All of these parts together are referred to as the vulva (Kelly, 2011, p. 31).

The *vagina* is actually part of the internal reproductive anatomy as it is what connects the uterus (or womb) to the outside of the body. Though many people think of the vagina as like a tube or a tunnel—always open, just waiting for something to go in or come out—it is not. The vagina is made of muscles that can open up if something (like a tampon, a penis, or a sex toy) is inserted into it or something (like a baby) is being pushed out of it, but most of the time the walls of the vagina are touching each other. It is important to note that the walls of the vagina are very elastic and though they can stretch to accommodate a full-size infant during childbirth, they do not stay stretched out (Kelly, 2011, p. 34).

Taking Care of Vulvas and Vaginas

Though the marketing world seems to want women to believe that the vulva requires special lotions, soaps, and salves, and that the vagina must be frequently cleaned out—the truth is that the same soap and water techniques you use for the rest of your body are exactly what you need for your genitals.

The vulva has a lot of blood vessels and can get warm easily which is why it also has a lot of sweat glands; sweat helps the body cool off. Sweat also has smell and it is true that most vulvas do have a particular scent. Though they don't all smell the same, some people think the smell is a little salty, a little yeasty, or kind of like sour milk (Herbenick and Schick, 2011, p. 48). This is all normal and does not require any special deodorant soaps or sprays. As Martha's college professor, Dr. Goodenough, once said: "There is no reason that a woman's vulva should smell like a field of wild strawberries." Women should take note of the smell of their vulva because if it changes or becomes significantly stronger at any point this could be the sign of an infection, but other than that there is nothing to worry about. In fact, some people find the smell of a woman's vulva to be an integral part of sex and arousal.

As for the vagina—the internal part which can't be reached with soap in the shower—the good news is that it cleans itself. Yep, the vagina has self-cleansing mechanisms and a delicate balance of microorganisms that keep it healthy (Kelly, 2011, p. 35). Though the practice of douching—forcing water or other liquid into the vagina to clean it out—has been around for thousands of years, it has been proven time and time again to be harmful to women, increasing their risk of getting sexually transmitted infections (STIs) and other infections. A review of literature by Martino *et al.* (2004) found research confirming that douching has been associated with increased risk of pelvic inflammatory disease (PID), bacterial vaginosis (BV), cervical cancer, recurrent yeast infections, and HIV transmission. Douching has also been associated with infertility and having low birth weight or preterm infants. Several studies have also found an association between douching and chlamydia (a common STI) though others have not (Martino *et al.*, 2004, p. 1053).

Martino *et al.* do add a caution about seeing this as a direct cause and effect situation. They note that douching is more common in certain

populations—African-Americans, people with low income, those with less education, and those who have more lifetime sex partners—who are already at higher risk for many of these outcomes including PID, BV, and STIs (Martino *et al.*, 2004, p. 1053). Still, douching is unnecessary and clearly risky.

The need for douching is one of the most stubborn myths about the vagina because, despite years of research showing that this is not healthy, many women still believe it is important and good for them. Ness *et al.* (2003) conducted a multisite study on douching habits and found that 66.5% of women who douched said it was to feel clean after menses, 43.6% said they did it for general hygiene reasons, 35.7% did it to cleanse themselves before or after sex, 26.9% did it to reduce vaginal odor, and 19.4% did it because they thought it was normal to douche (Ness *et. al.*, 2003, p. 72).

In their study of douching, Grimely *et al.* (2006) found that 70.3% of women who douched agreed with the statement "Douche products are safe to use; otherwise they wouldn't be on the market," Martino *et al.* looked at this very issue in their study and concluded:

> The FDA's [Food and Drug Administration's] role in regulation of the many vaginal douching products on the market is complex, as these products can be classified as drugs or cosmetics, depending on the type of claim made for the product and the type and strength of ingredients in the product. Although both cosmetic and drug products are required to prove safety, cosmetic products do not need to prove effectiveness as drug products do. The FDA also assesses the design and safety of any devices used to apply the douching solution. Our review suggests that current douching regulatory approaches are confusing at best and merit critical reassessment. (Martino *et al.,* 2004, p. 1054)

Additional oversight of these products seems wise as 90% of the women in Grimely *et al.*'s (2006) sample who douched had no intention of stopping (p. 303). Moreover, the women who douched were more likely to use other feminine hygiene products such as sprays (24% compared to 5.7% of nondouchers), cleansing wipes (30% compared to 14.5%), powder (21.5% compared to 6.6%), and cleansing bubble baths (20.5% compared to 6%). Interestingly, women who did not douche were more likely to use deodorant suppositories or tablets (19% of nondouchers compared to 12% of those who douche) (Grimely *et al.,* 2006, p. 307).

The myth that women's genitals need special attention and products in order not to smell bad is truly problematic. It has allowed industry to prey on women's insecurities and sell products that are not just unnecessary but potentially dangerous to their health.

Feeling Good About Girl Parts

In addition, it has perpetuated a cultural perspective that female genitals are something to fix and hide which has psychological implications for women as well.

Research has suggested that women who feel bad about their genitals are less likely to enjoy sex and more likely to participate in risky sexual behaviors. Morrison *et al.* (2005) found that more than one in five college students, for example, expressed dissatisfaction with the odor of their genitals. In an earlier study, Reinholtz and Muehlenhard (1995) found that negative perception about the smell and taste of one's genitals was linked to lower participation in various sexual activities (both as cited in Schick *et al.,* 2010, p. 401). More recently, as pornography has become more accessible, researchers have started to question how women feel about the appearance of their vulvas.

In a 2010 study, researchers at George Washington University used three separate measures to determine how young woman's perceptions of their vulvas impacted their sexual behavior and enjoyment. First, they measured "vulva appearance satisfaction," then they measured "genital image self-consciousness," and finally they measured "motivation to avoid risky sex, sexual esteem, and sexual satisfaction." As the authors had expected, the results indicated that "genital appearance dissatisfaction may have harmful consequences for both sexual satisfaction and sexual risk among college women due to its detrimental impact on genital image self-consciousness and self-esteem" (Schick *et al*., 2010, p. 400). In a small study of older women, Berman *et al.* (2003) similarly found that "positive genital self-image was found to negatively correlate with sexual distress and depression and positively correlate with sexual desire." However, they found "no correlations between genital self-image and relationship health, perceived stress, overall sexual function, arousal, lubrication, orgasm, satisfaction, or absence of pain" (Berman *et al.,* 2003, p. 16).

Schick *et al.* go on to point out that genital appearance dissatisfaction is particularly disturbing among college students, many of whom are engaging in their first sexual experiences: "Reduced sexual satisfaction during these formative years may impinge upon the development of healthy sexual self-concept and set the stage for future difficulties and concerns." Moreover, they note that decreased motivation to avoid risky sex could leave this population even more vulnerable to STIs, including HIV/AIDS (Schick *et al.,* 2010, p. 400).

Vulvas Get (Unneeded) Makeovers

In our society it has become somewhat acceptable to change the appearance of body parts that we don't like. Women (and men) smooth out the natural wrinkles of old age with Botox, remove excess fat with liposuction, and use rhinoplasty to even out bumps and hooks and create that perfect ski slope nose. We also should not forget about the popularity of breast augmentations as an instant way to get the double D's that some members of our society seem to value. In their essay on the "Designer Vagina," Braun and Tiefer (2009) point out that, "Although genital distress is nothing new for women, women's genitalia were, until recently, largely excluded from the intense self-surveillance and improvement imperatives that cosmetic surgery culture mandates" (p. 1).

Today, there are a number of elective plastic surgery procedures that women can use to change the look and feel of their genitals. Some, such as "vaginal rejuvenation" and "revirginization" claim to tighten the vagina to make sex more pleasurable. Another procedure, called "G-spot amplification" is supposed to make it easier for women to take advantage of their G-spot, an area in the vagina said to have heightened sensation (see Myth #4 for a discussion of whether the G-spot exists in all or some women). Another procedure, called labiaplasty, changes the appearance of the vulva most often by reducing the size of the labia minora so that they do not extend beyond the edges of the labia majora. Some suggest that when a woman's labia minora are too long they can interfere with daily activities such as walking, wearing certain types of clothing, and exercising. Miklos and Moore (2008) argue that many women who seek to have labiaplasty do so because they are experiencing discomfort. They surveyed 131 women who had the procedure at one clinic over a 27-month period and found that 37% had strictly aesthetic reasons for it, 31% had strictly functional reasons for it, and 31% had a combination of functional and aesthetic reason for seeking the surgery.

The American College of Obstetrics and Gynecology (ACOG), however, says that these procedures are rarely if ever medically necessary. In its committee opinion on the topic, ACOG states:

> These procedures are not medically indicated, and the safety and effectiveness of these procedures have not been documented. Clinicians who receive requests from patients for such procedures should discuss with the patient the reason for her request and perform an evaluation for any physical signs or symptoms that may indicate the need for surgical intervention. Women should be informed about the lack of data supporting the efficacy of these procedures and their potential complications, including infection, altered sensation, dyspareunia, adhesions, and scarring. (ACOG, 2007)

Miklos and Moore also argue that most women (93.1%) sought the surgery for purely personal reasons while only a few (6%) were influenced by their male partners (2008, p. 1493). Some feminist theorists, however, would argue that we have to look at the context under which such choices are made to determine if they really are purely personal. In her article on Brazilian waxing, Piexota Labre (2002) points out that women may take pleasure in or even feel empowered by activities that objectify and sexualize the female body but this does not mean that they are actually in the position of power (2002, p. 127).

Tiefer describes two feminist arguments when it comes to the issue of choice particularly around cosmetic surgery. The first, she says, highlights the physical and psychological harms of cosmetic surgery and believes that participation in the beauty culture inevitably adds to the already oppressive environment and makes it that much harder for the next women to resist that intervention. These scholars believe that even if something, such as cosmetic surgery, is a solution for one individual it might still be wrong to allow it on

a societal level because it increases gender inequality and limits the options of all women in the future. On the flip side, some feminist theorists suggest that all women have to live in our culture that is saturated with images of perfection and that sufferers deserve relief even if it takes the form of something as extreme as cosmetic surgery (Tiefer, 2008, p. 474).

Taking It (Pubic Hair, That Is) All Off

Cosmetic surgery on one's genitals is extreme and the question of whether women have, or should have, the choice to change a perceived problem with the appearance of their vulva may be harder to answer when dealing with something so drastic, painful, and permanent. We doubt that many of our readers will ever even consider elective plastic surgery on their genitals. We bet, however, that most of our readers (especially the women) have already considered removing—and many have already removed—some or all of their pubic hair. This is not all that drastic (hair grows back) but it can be painful and it does alter the natural appearance of the vulva—which, post-puberty, is meant to be covered with hair.

A recent study of adolescents at a Texas health clinic found that 70% routinely shaved or waxed their pubic hair (Bercaw-Pratt, *et al.,* 2012). In a larger study, Herbenick *et al.* (2010) surveyed 2451 women about their pubic hair grooming practices and found that overall most women had some hair on their genitals but this varied by age. Among the youngest participants, aged 18–24, 20.1% reported being typically hair-free in the previous month compared to 12.1% of those aged 25–29, 8.6% of those aged 30–39, 6.5% of those aged 40–49, and 2.1% of those aged 50 or older. The percentage of women who had removed all of their pubic hair at least once in the past month was slightly higher for all ages; 18–24 years (38%), 25–29 years (32.2%), 30–39 years (23.2%), 40–49 years (16%), and 50 or over (9.1%). Even more women partially removed their pubic hair one or more times during the past month. Still, the authors conclude that the majority of women typically have some pubic hair (Herbenick *et al.* 2010).

These findings contradict other findings in research as well as mainstream media reports that suggest that hairlessness is the new norm for vulvas. In her article, "The Brazilian wax: New hairlessness norm for women?," Peixota Labra, a native Brazilian, discusses this purely American phenomenon and fears that women are getting sucked into a practice that is not necessary, in part because of the media's fascination with and lack of criticism for this technique. According to Peixota Labre (2002), the Brazilian wax—which involves removing all (or almost all) of the hair from the mons and the labia as well as any hair a woman has, well, between her butt cheeks—started not in Rio but at a New York City salon. The procedure became a darling of women's magazines which often featured first-hand accounts by reporters, and was made infamous by an episode of *Sex and the City* which brought the expression "landing strip" (to describe one stripe of hair artfully left behind)

into common parlance. The media acknowledges that waxing hurts (we can still hear the screams of Steve Carrel when he waxed his chest in *The Forty-Year-Old Virgin*) but few conclude that it is not worth the pain.

Peixota Labre notes the gradual social acceptance of removing body hair from other areas such as the underarms and legs. She writes "most women first started to remove body hair to conform to social norms but later continued to do so for reason related to femininity and attractiveness" (p. 116). She suggests that "the removal of female body hair, particularly in the genital area, can be viewed as a component of the objectification of women and construction of women as objects designed to attract male attention and provide men with sexual pleasure" (p. 124). She, too, blames advertising and other media for perpetuating the idea that women in their natural state are less than ideal: "As a result, body hair, which is both natural and normal, has been constructed as a revolting enemy against which women must continuously wage battle" (p. 124).

Interestingly though, Herbenick *et al.* found that even after controlling for other factors, those women who were typically hair-free or sometimes hair-free in the previous month scored significantly higher on their genital self-image scale, meaning that these women had more positive images of their own genitals than the women who had not removed any or all of their pubic hair in the previous month (Herbenick *et al.,* 2010, p. 3325).

It is possible that these women were more comfortable with their vulvas before taking off the pubic hair which is what allowed them to put in that effort to begin with or it is possible that they felt better about their genitals at the time of the study because they had "conformed" to a new societal standard.

We are not going solve the ongoing debate around how women's beauty choices get made and whether they can ever be truly personal in our society, especially when it comes to issues of the vulva. What we can tell you is that neither genital surgery nor removing pubic hair is medically necessary and as such should not be done without giving it careful thought (and in the case of surgery discussing it with one or more health care professionals).

We also want to throw in one word of caution from a study that came out while we were writing this chapter. It found that the incidence of pubic hair grooming accidents that are bad enough to land people in the emergency room are going up. It seems almost comical, but the report by scientists at the University of California, San Francisco found that cuts, scrapes, and burns to the urogenital area increased fivefold between 2002 and 2010 with an estimated 2500 injuries in 2010. The majority of these injuries (57%) were in women but no small number (43%) occurred in men. And these figures are likely an underestimate given how many people may not seek help. The primary culprit was the razor (83%) but scissors factored into 22% of injuries and hot wax into just over 1% (Glass *et al.*, 2012). We are not taking a position on whether anyone should wax, pluck, tweeze, shave, or grow some kind of pubic hair Mohawk; just be careful.

A Do Nothing Policy

To wrap up our rant on vulvas here, we just want to make sure that everyone understands the basics which are simple: the vulva is outside, the vagina is inside. The vagina cleans itself and the vulva just needs regular showers with soap and water to stay fresh. Neither part needs to be deodorized, powdered, made smaller, made bigger, or in any other way altered. Instead, we suggest enjoying them the way they are.

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Myth #3

Male Circumcision Is Dangerous and Completely Unnecessary

Despite the fact that this is only the third myth out of 50—and many issues in sexuality are the subject of debate—we are going to make a prediction that this will be the most controversial entry in the whole book. Public opinion of male circumcision—an age-old practice of removing the foreskin (or prepuce) from the head of the penis—has swung wildly throughout history. While it was once primarily a religious practice for Muslim and Jewish men, it became an accepted medical procedure that was more common than not in the United States and parts of Europe during the twentieth century. In recent years, however, the percentage of male infants who are circumcised has been dropping and a heated debate has been taking place between those who believe this is a medically beneficial (or even a medically necessary) procedure and those who see it as an immoral form of bodily mutilation without consent.

The debate is so heated that even the science becomes controversial, with those who want to see an end to circumcision casting doubt on the research methods and even the motives of the researchers.

We don't believe that we can solve this debate within the confines of this entry, nor is that our goal. Instead, we will attempt to explain it thoroughly so that you have the best information and thinking on the topic. Our aim is to fairly represent all sides of the debate. That said, we are not neutral on the topic, as sexual health educators we naturally put a lot of weight on the science of public health—especially those studies that show circumcision reduces the risk of contracting and/or transmitting STIs, including HIV. We believe that as of now the scientific evidence on the benefits and risks of male circumcision is strong enough to suggest that this practice is neither dangerous nor completely unnecessary.

The Scientific Debate Over Circumcision

Medical science has been in favor of male circumcision since the Victorian era though the earliest rationales for it were less scientific and more, well, ridiculous. (This is no doubt part of the reason that some people are suspect of today's research.) At the end of the nineteenth century, doctors suggested that circumcision would cure everything from "masturbation to epilepsy to bed-wetting" (DeLaet, 2009, p. 418). By the mid-twentieth century, however,

medicine was focusing on more reasonable benefits such as a reduction in certain kinds of cancers.

Interestingly, Dr. Abraham Ravich, Martha's great grandfather, was among the physicians who began making these arguments. Ravich was a urologist in Brooklyn starting in the 1920s. Many of his patients were Jewish immigrants from Eastern Europe who were circumcised because of their religion. He noted that these men had fewer incidences of penile cancer, prostate cancer, and venereal disease (VD , or what we now refer to as sexually transmitted infections, STIs). He published his results in a book, *Preventing V.D. and Cancer by Circumcision*, in the early 1970s. In our research, we have found that some anticircumcision activists (who like to call themselves intactivists) refer to Ravich as a zealot who invented his research to advance the practice of circumcision.

There are similar complaints about even the most recent research. Some say that the studies are unreliable because of their retrospective design, the small sample sizes, the indirect approach to obtaining data, and the reliance on self-report to determine if participants were, in fact, circumcised. Others argue that the results of studies about HIV in Africa are irrelevant to babies born in the United States because the HIV epidemic here (not just the incidence of HIV but the ways in which it is commonly transmitted) are so very different.

The American Academy of Pediatrics (AAP) released a new committee opinion on circumcision in 2012. In order to develop this opinion, AAP created a task force of experts to review the research that had been published between its last review in 1995 and 2011. The task force assigned each article an evidence rating of "excellent," "good," "fair," or "poor" based on the methodology used and how well it was applied. In writing their review of the research—and ultimately developing the committee's decision—the task force took these ratings into account (AAP, 2012, p. e761). Though we understand that some in the medical world do not agree with the task force's findings, we believe that the technical report represents a comprehensive and thoughtful look at the research and are relying on it in our summary of what the research says.

Low Risk Procedure

In determining the cost–benefit of an invasive procedure, the first thing to understand is whether the procedure itself has risks or complications and how serious those are. The AAP points to two large hospital-based studies with good evidence that the risk of significant acute complications is very low, 0.19–0.22%, and most were not serious. Acute complications mean those that happen right away: bleeding, infection, and penile injury. There are other complications that can happen later, such as adhesions, but these are also quite rare (AAP, p. e771). The complication rate may be slightly higher if the procedure is performed by a traditional or ritual provider outside of the hospital but there are few data about this. The complications are also higher when circumcision is performed after the newborn period (AAP, p. e773).

One of the complaints that those opposed to circumcision have is that the procedure is painful and that it has historically been carried out with no pain medication. In the past, infants were just given a sugar-covered pacifier. The AAP acknowledges that this is not sufficient pain management, even for an infant, and suggests that "adequate analgesia" be used (p.770).

Health Benefits of Circumcision

According to the AAP, the current research suggests that newborn circumcision can help prevent urinary tract infections (UTIs), penile cancers, HIV, human papillomavirus (HPV), and other STIs.

- *Urinary tract infections:* there is good evidence from two studies that the task force describes as "well-conducted" that newborn circumcision reduces the incidence of UTIs in boys under the age of 2 years. The results of another study suggest that 7–14 out of 1000 uncircumcised boys will develop a UTI during their first year of life compared to 1–2 out of 1000 circumcised boys. UTIs are not usually serious though they are uncomfortable and can require a visit to a physician, medication, and possibly even a hospital stay or an invasive procedure (AAP, 2012, p. e767).
- *Penile cancers:* there is some evidence that circumcision prevents penile cancer and even more evidence that it prevents the most invasive form of penile cancer. However, penile cancer is so rare in the United States that it would take 990 circumcisions to prevent one case of penile cancer (p. e767). Some would argue that this negates any prevention benefit when it comes to penile cancer because 990 circumcisions would likely lead to two complications.
- *HIV:* some of the best evidence on the health benefits of circumcision comes from studies in areas where HIV rates are high. The AAP task force states: "Review of the literature revealed a consistently reported protective effect of 40 percent to 60 percent for male circumcision in reducing the risk of HIV acquisition among heterosexual males in areas with high HIV prevalence due to heterosexual transmission (i.e. Africa)" (p. e764). There is less research on the protective effect in the United States where the overall HIV rate is lower and transmission is more common among men who have sex with men. A recently released study from the Centers for Disease Control and Prevention (CDC), however, put the findings from these African studies into mathematical models and suggested that male circumcision before sexual debut would reduce the lifetime risk of HIV transmission by 15.7% for all males (Samson *et al.,* 2010). This projection takes into account that circumcision seems less likely to protect men who have sex with men (MSM) from HIV transmission. The task force explains: "It is not known to what extent circumcision may be protective against HIV transmission from MSM who practice insertive sex versus for those who engage in receptive sex" (p. e765).

Researchers also offer an explanation of how circumcision protects men against HIV. One possible reason is that the inside surface of the foreskin is easily torn especially during sex and this could provide an entry point for HIV (and other germs). The foreskin also contains "a high density of HIV target cells (i.e., Langerhans cells, CD4 T cells, macrophanges) which facilitates HIV infection of host cells." And, finally, germs may get trapped under the foreskin giving them more time to replicate (p. e764).

- *HPV and cervical cancer:* this last explanation has been shown to be a possibility in HPV infection as well. As a reminder, HPV is the virus that causes genital warts. It also causes cervical cancer in women. HPV is one of the most common STIs in the United States. The task force found two studies with good evidence of 30–40% reduction in risk among circumcised men. There are four other studies that provide fair evidence of risk reduction. A study by Australian researchers found that the foreskin can provide a reservoir for HPV cells (a place for them to collect) (Ladurner Rennau *et al*., 2011). However, the authors of that study caution that just because those cells are there does not mean they're transmissible.

  Still, there is good evidence that circumcision reduces the rate of male-to-female transmission of high risk HPV (the types of the virus that are most likely to cause cervical cancer) from men who were not infected with HIV. Moreover, there is some evidence (rated as fair) that male circumcision has a protective effect against cervical cancer for female partners as well if the man has multiple female partners (AAP, 2012, p. e768).
- *Other STIs:* finally, there is evidence that circumcision is protective against syphilis, herpes, chancroid (a rare bacterial infection), and BV (a bacterial infection of the vagina that is not necessarily sexually transmitted). The evidence suggests that circumcision provides no protection against chlamydia or gonorrhea.

Impact on Sex

One of the claims of those who are opposed to male circumcision is that it negatively impacts sexual function and reduces sexual pleasure. As most males are circumcised as infants (long before they become sexually active), it is hard to measure the direct impact of the procedure on sensitivity or function.

Some studies have looked at the impact on sexual satisfaction for men who are circumcised as adults. The AAP task force found two good quality studies of these men. In the first study of 5000 Ugandan men, circumcised men reported significantly less pain on intercourse than uncircumcised men and 2 years after the procedure the men's sexual satisfaction remained the same as it had been at baseline (98.4% compared to 98.5%). Interestingly, the satisfaction level in the control group went up from 98% at baseline to 99.9% 2 years later. The second study looked at men in Kenya and found that 64%

reported greater sensitivity after the procedure and that 55% of circumcised men reported having an easier time reaching orgasm than they did before the procedure (though this change was not statistically significant; AAP, 2012, p. e769).

According to the AAP, a study of Korean men found fair evidence of decreased pleasure from masturbation after adult circumcision. For the most part, though, studies have failed to show any evidence that circumcision decreases sexual sensitivity compared to uncircumcised penises. Most evidence suggests that there is no difference in sexual sensation and satisfaction for men regardless of whether they are circumcised (AAP, 2012, p. e769).

As with the task force's conclusion on health benefits, many disagree with its conclusions on sexual pleasure and function. Christopher L. Guest, the co-founder of Children's Health & Human Rights Partnership, writes in his rebuttal to the AAP report: "the foreskin is richly innervated, erogenous tissue which enhances sexual pleasure and it also provides a unique, linear gliding mechanism during sexual intercourse." He points out that, in 2009, the College of Physicians and Surgeons of British Columbia stated "the foreskin is rich in specialized sensory nerve endings." In 2010, the Royal Australian College of Physicians stated "the foreskin is a primary sensory part of the penis, containing some of the most sensitive areas of the penis" and, in the same year, the Royal Dutch Medical Association concluded "the foreskin is a complex erotogenic structure that plays an important role in the mechanical function of the penis during sexual acts" (Guest, 2012).

The Ethical Debate over Circumcision

It is clear that the debate over circumcision is very heated and growing more so. Georganne Chapin, the executive director of the anticircumcision group Intact America, said this about the practice: "About a million people a year, newborn babies, lose a normal, healthy, functional, pleasurable, protective body part without their consent" (Bristol, 2011, p. 1837).

Chapin and other anticircumcision activists dismiss the AAP task force's report as being biased and profit-driven. She suggests that the report represents "a trade association agenda that desperately seeks to justify and secure reimbursement for a medically-unnecessary surgery that harms children and violates their basic human rights" (Chapin, 2012). She further dismisses the science suggesting that the African studies on HIV are being used as "an after-the-fact justification for a custom that is increasingly being rejected by those who see it as violating children's rights to bodily autonomy and their own future freedom of religion" (Chapin, 2012).

After dismissing the current science, those who oppose circumcision frequently argue that the procedure is unethical because infants cannot give informed consent, infants are not at immediate risk if they do not get circumcised, and as such parents are unfairly imposing their cultural values on children in a way that cannot be revoked. They also suggest that those in the

Western world who support circumcision—including the medical community—are blinded by their own cultural values that see female circumcision as an abhorrent, primitive ritual but see no moral parallels when boys are subjected to a similar procedure.

Informed Consent and Immediate Risk

One of the basic premises in the practice of medicine is physicians cannot perform any procedure on a patient without first getting his/her informed consent. To do this, health care providers must clearly explain the risks and benefits before getting the patient's explicit permission. There is widespread agreement that children are not capable of giving consent and as such their parents or guardians are in charge of their health throughout childhood and adolescence. Those who oppose circumcision, however, argue that parents should not have the right to permanently alter their child's body unless it is immediately necessary for their health and well-being.

Certainly, many people would agree that it would be inappropriate for a parent to consent to a nose job for their 10-year-old; that since the procedure is not immediately (if ever) medically necessary, the decision should be deferred until the child is old enough to decide for him or herself. The issue is not as clear-cut when children are born with facial deformities or even large birthmarks in visible areas—many parents find it morally acceptable to consent to certain plastic surgery procedures (even those that are for purely aesthetic reasons) if they feel it will improve their child's quality of life.

Circumcision presents an additional complication because the procedure cannot necessarily be postponed. Delaying circumcision makes it more complicated, more painful, more risky, and more psychologically difficult. So, while ideally surgical procedures would wait until the infant grew and was able to make his own decisions, this is not really possible with circumcision.

Moreover, the health benefits of circumcision, though not immediate, may only be seen if the procedure is done at an early age. From a public health perspective it is important that protective measures against STIs, such as vaccines for HPV and hepatitis B, be given before an individual is sexually active and subject to exposure. Chapin and others argue that even if the studies of HIV in Africa are scientifically valid, they are irrelevant to infants in the United States who are not and will not be sexually active for more than a decade. While this is true, parents make decisions not just for their children's current health, but for their future health as well. Vaccines are actually a good example; children may not be at risk for the measles at the moment they receive the measles, mumps, and rubella (MMR) inoculation but parents choose the shot anyhow to protect them throughout their lives. Moreover, parents vaccinate infants in order to protect not just their own children but their communities as vaccinations are most effective when the majority of the "herd" is vaccinated (Benatar and Benatar, 2003). The same may be true of circumcision as widespread circumcision is being promoted as a way to reduce HIV in areas with a high prevalence of the disease (Wamai *et al.,* 2011).

In truth, even the ethical arguments about circumcision hinge on the science and research. If you believe the science that finds circumcision to be low risk and high benefit, then these arguments about informed consent are not issues—parents have always been allowed to consent to medically necessary procedures for their minor children. If you do not believe the procedure is beneficial, or worse you think it is harmful, then your answers to these ethical questions will likely be different.

Role of Culture, Religion, and the Comparison to Female Circumcision

Male circumcision began as a cultural and religious ritual rather than a medical procedure. Many people continue to choose it for their boys not because of the medical benefits but because of the cultural significance. In fact, some argue that male circumcision is morally acceptable simply because of its cultural and religious roots. However, this is not sufficient reason to justify any practice. Benatar and Benatar point out that "simply because a practice is culturally valued does not mean it is morally acceptable" (2003, p. 43). If the procedure is harmful, for example, then the cultural value is morally overridden. The case in point for this side of the argument is actually female circumcision which is often called female genital mutilation (FGM).

FGM refers to a wide range of practices which the World Health Organization (WHO) has put into four categories. The first is the removal of the prepuce or outer skin of the clitoris. This procedure is the least invasive and most common form of FGM worldwide and is the most similar to male circumcision. The second involves the removal of the clitoris and may also involve the removal of all or part of the inner vaginal lips (the labia minora). This procedure is much more invasive than male circumcision. Moreover, it prevents clitoral stimulation and may prevent all orgasms in many women. The third category is called infibulation and is the most extreme and invasive form of FGM. It involves the total or partial removal of the external genitalia as well as stitches in the vagina to narrow the vaginal opening. Infibulation is common in two countries (Sudan and Eritrea) but not common in the rest of the world though it is often what we think of when we hear the term FGM. Finally, the fourth category is labeled "unclassified" by the WHO and encompasses some of the least invasive forms of FGM (such as ritual nicking of the clitoris) and the most damaging forms (such as putting a caustic substance inside the vagina) (DeLaet, 2009).

The argument over FGM pits those who say these procedures are integral parts of certain cultures and that women who don't have them will be shunned by their communities against those who say FGM impinges on basic human rights (DeLaet, 2009 p. 414). Though some women's rights advocates suggest that certain minimally invasive forms of ritual FGM should be acceptable, there is a large worldwide campaign to eradicate the practice completely.

Many opponents of male circumcision question why there is not the same moral outrage to this procedure. DeLaet acknowledges that "male circumcision as typically practiced is not the physical or moral equivalent of

infibulation, and it is not difficult to understand why either defenders of male circumcision or critics of female genital mutilation would resent the comparison" (p. 415). The most common form of FGM, however, involves the removal of the prepuce which is analogous to the foreskin on the penis. The procedure is not all that different from male circumcision but the reaction to each procedure is worlds apart. DeLaet notes that, "Critics of the disparate treatment of male and female circumcision argue that it reflects a "Western" double standard in which human rights activists in the West disregard sexual mutilations performed on boy children in their own societies" (DeLaet, 2009, p. 414).

This is an interesting double standard and we agree that people see the world through their own cultural lenses. It is likely that our opinion on circumcision is colored by our own backgrounds and by growing up and raising our own children in a culture and a religion that supports male circumcision and condemns the practice on women.

Ultimately, however, we believe that everything comes down to whether the procedure is harmful or beneficial. There is no research to suggest that FGM is beneficial and a great deal of research suggesting that especially the more invasive forms are harmful. Though disagreements remain, today's research suggests a certain degree of benefit from male circumcision.

Conclusions

As of now, no major medical organizations are suggesting that all newborn infants be circumcised for health reasons. Instead, the view is that the procedure should be available to any family that wants it and should be reimbursed by insurance. Both AAP and the CDC suggest that parents need to be carefully educated about the benefits and risks of the procedure and the ways to make it as safe and painless as possible if they choose it.

We agree that more education about circumcision is necessary as parents should understand the existing science (including the criticisms of this science) and make the best choice for their child. We understand that this is an area that people—both in favor of and opposed to newborn circumcision—feel very strongly about and we hope that a healthy and respectful debate continues.

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Myth #4

The G-spot Is the Most Orgasmic Part of a Woman's Body

There are definitely proponents of the G-spot who extol it as a special site for orgasm and pleasure inside the vagina. And there are women who believe they have a G-spot and want to protect their firm sense of the reality of their own body. But there are skeptics with some pretty convincing evidence to the contrary. This topic is hotly debated and if you voice skepticism to the believers, especially the "re-discoverers," they are likely to bite your head off. But we're brave.

Let's start with the hardest part.

What Is the G-spot?

In the 1940s, Ernest Graftenberg located a spot inside the vagina that he felt had different tissue and was related to the urethra. Not too much was made of this until the publication of *The G Spot and Other Recent Discoveries About Human Sexuality* by Alice Kahn Ladas, Beverly Whipple and John D. Perry in 1982. These authors did some experiments on women and felt that Graftenberg had located an uncelebrated erotic spot and, moreover, that it was the locus of vaginal orgasms and not related to the clitoris. They named it the G-spot after its discoverer and wrote a number of scientific papers about it in addition to the book. The research was dismissed by many sexual medicine specialists but the original authors and other researchers continued to defend—and extend—their initial assertions.

Jannini *et al.* describe the debated area this way:

> The G-spot is a sensitive area felt through the anterior wall of the vagina about half-way between the back of the pubic bone and the cervix, along the course of the urethra. It is easiest to feel the G-spot with the woman lying on her back. If one or two fingers are inserted into the vagina, with the palm up, using a "come here" motion, the tissue that surrounds the urethra will begin to swell.

> When the area is first touched, the woman may feel as if she needs to urinate, but if the touch continues for a few seconds longer, it may turn into a pleasurable feeling" (2010, p. 27).

For many women, however, finding this spot has proved elusive. They can't just stick their fingers in and feel for an easily identifiable location. This has created doubt about the very existence of the G-spot and sent the original researchers and others who have followed them back to the lab to try to demonstrate its exact construction.

Quite recently, a Polish researcher did some work on cadavers and found that "the G-spot appeared as a well-delineated sac with walls that…resembled erectile tissues. The superior surface of the sac had bluish irregularities visible through the coat. From the distal tail, a rope-like structure emerged, which was seen for approximately 1.6 mm and then disappeared into the surrounding tissue" (Ostrzenski, 2012, p. 1355). His findings are still being debated.

Are G-spot Orgasms Better?

Most enthusiasts claim that the spot, when stimulated, not only creates exquisite sexual sensitivity but also a different kind of orgasm, "Barry R. Komisaruk, Professor at the Department of Psychology, Rutgers, wrote that the G-spot was a different orgasmic pathway than the clitoris even though the area is a bundle of overlapping nerves that include the clitoris" (Jannini *et al.,* 2012, p. 958). A paper from some of the members of the original research team further states: "Some women describe experiencing orgasm from stimulation solely of the G-spot. The orgasm resulting from stimulation of the G-spot is felt deep inside the body, and includes a bearing-down sensation" (Jannini *et al.,* 2010, p. 27).

The researchers who resurrected the discussion of a G-spot also believe that they have evidence that the brain reacts differently to stimulation from this spot from clitoral excitement:

> Because the vaginal and the cervical self-stimulation activated sensory cortical regions that are distinctly different from the region activated by clitoral self-stimulation, this refutes the possibility that awareness of vaginal or cervical stimulation is simply a consequence of indirect clitoral stimulation…This is further evidence that vaginal and cervical stimulations generate their own unique sensory input to the brain that is separate and distinct from clitoral sensory input, and adequate to activate orgasm. (Jannini *et al.,* 2012, pp. 960–961)

So Why Doesn't Everyone Believe the G-spot Exists?

This all sounds pretty convincing and there are certainly many women who will attest to the unique sensitivity of their G-spot. It is even described as fact in quite a few textbooks. Yet, there is a large group of scientists who do not

believe that a special tissue or area of sexual excitation exists that is separate from the clitoral nerves that surround the entrance to the vagina. And there are many women who search for the spot inside their vagina, to no avail. Even the G-spot research team says, "Women have reported that they have difficulty locating and stimulating their G-spot by themselves, except with a dildo, a G-spot vibrator, or similar device…(but they have no difficulty identifying the erotic sensation when the area is stimulated by a partner)" (Jannini *et al.,* 2010, p. 27).

The ongoing debate is really focused on whether or not the G-spot is separate from the rich network of clitoral nerves that surround it. Masters and Johnson were the first to determine that the clitoral structures surround and extend along and within the labia. They filmed and analyzed orgasms from both clitoral stimulation and vaginal intercourse and concluded that all orgasms originated in some kind of direct or indirect clitoral arousal (Masters and Johnson, 1966).

More recent research has concurred. Tim Spector, who co-authored a 2009 study on the topic, also hypothesized the tissue in the G-spot area may be part of the clitoris and is not, as argued, an unaffiliated sexual zone (Archer and Lloyd, 2002, pp. 85–88). Urologist Helen O'Connell also did anatomic studies and wrote that the G-spot is indeed clitoral tissue and therefore even though excitation may be sourced in the vagina, it is clitoral nerves creating the sensation. O'Connell used magnetic resonance imaging (MRI) scans and felt that there was conclusive evidence that the "legs" of the clitoris accounted for the G-spot's erectile tissue. To quote her, "The vaginal wall is, in fact, the clitoris…If you lift the skin off the vagina on the side walls, you get the bulbs of the clitoris" (O'Connell *et al.,* 2005, pp. 1185–1195).

An interesting secondary discovery for O'Connell in examining female cadavers was that some women seemed to have more extensive clitoral nerves than others. She felt this may account for ease—or difficulty—of having an orgasm or needing direct versus indirect stimulation of the clitoral area. Her work has been replicated by the French team of Odile Buisson and Pierre Foldes who used imaging technology to come to their conclusions. They also showed how the clitoral system surrounds and stimulates the vagina and is therefore responsible for "vaginal" orgasms. Basically, the authors conclude that the vaginal and clitoral system are so intertwined that it is ridiculous to try and separate their interaction (Buisson and Foldes, 2009, pp. 1223–1231).

A recent study by a team of researchers hypothesized that the G-spot is an extension of the clitoris and clitoral nerve system and that the friction against these nerves is the cause of vaginal orgasms as opposed to them being caused by a distinctly different anatomical structure. In an influential article, the lead author, Kilchevsky, stated unequivocally that because the clitoris is essentially the same biological structure as the penis (the latter enlarged by male hormones), there is no reason evolution would create two separate apparatus for orgasms. He lambasts porn providers and sex toy makers for what he believes to be the mythology of a G-spot (Kilchevsky *et al.,* 2012).

In fact, these authors were convened as part of a panel in 2010 and again in 2012 by the *Journal of Sexual Medicine* in an effort to get a definitive answer on this subject. The panel was tasked with examining dozens of papers written on the G-spot, and, ultimately, they discounted them. The panel concluded, "Reports in the public media would lead one to believe the G-Spot is a well-characterized entity capable of providing extreme sexual stimulation, yet this is far from the truth" (Kilchevsky *et al*., 2012).

Where Does This Leave Us?

We think skepticism about the G-spot is warranted. The samples of women who have been investigated are small, a small group of investigators are primarily responsible for most of the writing on the topic, and the density of clitoral nerve endings in the area makes the demarcation of a morphologically unique area hard to support. Furthermore, like some of the scientists who have failed to find the G-spot or define it as a special area of sexual function, we are worried that women who cannot find it (perhaps because it doesn't exist) will now feel they are sexually deficient in yet another way!

If the G-spot is still disputed territory, perhaps we can find a compromise on this issue from the work of Rutgers professor Barry Komisaruk who did some of the MRI studies in which brain scans showed that stimulating the clitoris, vagina, and cervix lit up separate areas in women's brains. He concluded: "I think that the bulk of the evidence shows that the G-Spot is not a particular thing. It's not like saying, 'What is the thyroid gland?' The G-Spot is more of a thing like New York City is a thing. It's a region, it's a convergence of many different structures" (Komisaruk *et al*., 2011).

However, we do not want our readers to take our skepticism as reason not to do some personal experimentation on themselves or their partners. In fact, we urge you to follow the instructions above and see what you find and how it feels. We bet that if it feels good and leads to a really intense orgasm, none of you will really care if it's a separate anatomical structure or a cluster of clitoral nerves.

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Myth #5

Testosterone Is the Main Predictor of Sex Drive in Men, and You Can Always Add More

There is no doubt that testosterone, an androgen, or male hormone, plays a part in sexual arousal and appetite. Though this hormone does have an impact in both men and women, the fact is that sexual appetites are highly mediated by mood, values, beliefs, experience, relationships, physical complications, medications, and a host of other conditions. Teasing out how much of a role testosterone really has can be difficult. But we're up to the challenge and in this myth we look at the research for both men and women.

Testosterone in Men

Testosterone is a sex hormone that is produced by both the testes in men and the ovaries in women as well as the adrenal glands in both men and women. It is responsible for secondary sex characteristics in men such as facial hair, body hair, and deep voice. Testosterone has an activating effect on sexual desire for both men and women (Kelly, 2011).

For men, androgens are a core part of the erectile system. Studies of erectile dysfunction have found that low levels of free testosterone correlates with impaired ability of the cavernous endothelia and corporeal smooth muscle cells to deliver enough blood for the penis to become rigid (Aversa *et al.,* 2000, p. 517). Further, several studies have shown that low testosterone levels will correlate with lower sexual desire (Aversa *et al.,* 2000). It is not true, however, that having high testosterone levels will always correlate with more sexual activity or better erections (Anderson *et al.,* 1992; Bagatell *et al.,* 1994). Erection and arousal issues may have an organic origin but unless lower than normal levels of free testosterone are found, or there is some injury to the genitals, the primary causes of lack of arousal or erection are thought to be mostly due to psychological issues with sex, performance fears, relationship woes, or lack of attraction (Aversa *et al.,* 2000, p. 519; Buvat and Lemaire, 1997).

The part that testosterone plays in sexual drive is actually a controversial subject among researchers. A number of studies have indicated that total

testosterone was related to erectile ability but not sex drive, except among aging men where less bioavailable testosterone was present (Gades *et al.,* 2008, p. 2209). Another study also found correlations to erection but not sex drive (Ahn *et al.,* 2002). The long-running Massachusetts Male Aging study found no correlation with either total or bioavailable testosterone and erectile functioning (Gades *et al.,* 2008). These findings, however, were somewhat modified by a meta-analysis of 17 trials by Boloña *et al;* they felt that testosterone had a direct effect on erections and a modest effective on sex drive (Boloña*et al.,* 2007). In addition, a study of Korean sex offenders who were chemically castrated using drugs to inhibit testosterone came to the conclusion that testosterone was the mediating agent for sexual arousal. However, the authors did say they could not be positive about their results because of a small sample, the fact that there was no placebo/control group, and the possibility that the offenders were not being honest in their self-reports (Koo *et al.,* 2013, p. 565).

Even more controversial than the role low testosterone level has in sex drive is the question of what to do about it. If a low testosterone level is truly present, many doctors recommend testosterone therapy which is used to help increase sexual interest and create better erectile function (Bancroft and Wu, 1983; Kwan *et al.,* 1983; Cunningham *et al.*, 1990; Rakic *et al.,* 1997; Aversa *et al.,* 2000). In a recent article, Ronald Swerdloff, chief of the division of endocrinology and metabolism at the UCLA School of Medicine, stated "Men who have repeatedly tested low for testosterone concentrations in their blood and who also have symptoms consistent with testosterone deficiency are reasonable candidates for treatment" (Nutrition in Action, 2014a, p. 10). But testing is difficult. Swerdloff goes on to say, "Some men may have a low level on one day, but a week or a month later, they may be back to a completely normal level"(Nutrition in Action, 2014a, p. 10).

There are some interesting and subtle factors of how the mind influences the body that suggest that testosterone deficiencies themselves as well as reduced blood flow to the penis might actually be due to stress factors or, often, relationship factors. Difficulty or hostility at work, in the family, or in a relationship, for example, may cause decreased testosterone levels. To quote one group of investigators, "Present data show that, in subjects consulting for sexual dysfunction, deterioration of the couple's relationship may be associated with impairment in sexual activity, which, in turn, can lead to a mild hypogonadism"(Corona *et al.,* 2009, p. 2597). In other words, it's not just sex drive and erections that are influenced by psychological factors, testosterone levels themselves are highly influenced by emotions (Aversa *et al.,* 2000; Corona *et al.,* 2009).

Researchers are also concerned about the long-term effects of adding testosterone. Some believe that there is not enough information available yet to know whether potentially dangerous side effects come with long-term use of replacement therapy (Gades *et al.,* 2008, pp. 2210–2013; McKinlay, 2006).

Testosterone in Women

If you think the action of testosterone is a controversial topic concerning men, it is nothing compared to the friction in the medical and behavioral science communities over the function of testosterone in women—and the dangers that hormone drug therapy may present to women. At issue are various kinds of testosterone treatments: oral testosterone, transdermal testosterone, testosterone patches, sublingual testosterone, intramuscular, subcutaneous, pellets, gels, and creams (Hubayter and Simon, 2008, pp. 187–188).

Here, we start with rats (sorry ladies). Researchers looking for a medical way to reduce or change what they consider to be low sexual desire in women (or what women and/or their partners consider a lack of ability to want or enjoy sex) first started to see if they could arouse female rats. One study used looked at vardenafil, a PDE5 inhibitor similar to that found in Viagra, in combination to see if they could produce some horny rodents. Neither testosterone injected under the skin nor an oral version of vardenafil worked on their own, but when they put the two together female rats became more receptive to male mounting behavior and also sought out the males for sexual activity (Snoeren *et al.,* 2011, p. 989).

Other studies have carried out similar tests on human females. Van der Made *et al.* (2009) applied the combination of testosterone and vardenafil to women patients who said they had extremely little or no sexual desire and concluded that the combination enhanced desire and was demonstrated by more sexual arousal when they watched erotic images.

A few double-blind studies on women with deficient hormonal levels found that being treated with estrogen produced some changes in sexual desire (Mulhall *et al.,* 2004; Bain *et al.,* 2007). Other approaches included using testosterone with estrogens in women who no longer had functioning ovaries. This was deemed to improve sexual interest (Snoeren *et al.,* 2011, p. 991). Stephanie Page, a researcher at the University of Washington, has written that "some good trials show a small benefit for sexual function in women who have undergone surgical menopause or who are naturally menopausal" (Page *et al.,* 2005).

A batch of studies, some of them with very small samples, have looked at women's natural peaks of testosterone around ovulation and found correlation with sexual gratification when intercourse or other sexual activity occurs at that time. One study of 11 couples found that high baseline testosterone, but not daily testosterone, was related to women's positive evaluation of their sexual experience (Persky *et al.*, 1978, p. 157).

While all researchers admit that there is not enough research on the use of testosterone alone as a mediator of female sexual interest, there is a lot of "off-label" use. "Off label" use means the drug has been approved by the Food and Drug Administration (FDA), which has demanding standards, but not for the use it is currently being applied to. So, when synthetic testosterone which was approved for erectile problems in men is used for sexual arousal in women without being tested for efficacy and safety, that use is referred to as "off label." Nonetheless, some doctors feel the use of testosterone in

various hormonal combinations for women who are upset about the loss of sexual interest is appropriate. For example, Estratest, a common hormonal combination, is FDA approved to help women suffering from extreme post-menopausal discomforts (sleeplessness, hot flashes, headaches, and other problems) but is being used "off label" as a way to increase sexual interest in women. Research suggests that the combination of estrogen and testosterone increases blood flow to the vaginal area, clitoral sensitivity, and rates of orgasm. As a result it increases sexual desire and behavior. It can also prevent vaginal atrophy among older women or women who have had their ovaries removed (Lobo *et al.,* 2003; Hubayter and Simon, 2008, p. 183).

Advocates of testosterone therapy admit certain possible negative side effects such as increased skin oiliness, acne, deepened voice timber, changes in personality such as increased hostility, weight gain, and hair loss. Other side effects include elevated liver function, lower HDL levels (high density lipoprotein, the good cholesterol), and even carcinoma (a type of cancer) (Hoeger and Guzick, 1999; Redmond, 1999; Snoeren *et al.,* 2011). A particularly troubling study published in the *New England Journal of Medicine* found that when 209 men with low testosterone levels were involved in a study that gave some men testosterone and others a placebo, the men who received additional testosterone were five times more likely to have a heart attack or other heart problems. This was so worrisome that the researchers cancelled the research (Nutrition in Action, 2014b). Still, there are clearly clinicians who feel that the chances of these side effects are slight and the benefits may be worth it.

The presence of these side effects is not a minor issue to a large group of critics who are fighting the legitimization of testosterone therapy for women. They believe women's bodies have been used as experimental laboratories for a lot of drugs (for example, high dose contraceptive pills). Perhaps the angriest commentary on testosterone therapies comes from a group of feminist researchers and clinicians who feel that the whole concept of low sexual desire for women has been invented. Chief among these critics is psychologist Lenore Tiefer (2001), who, with a number of other therapists, clinical professionals, and researchers, feels that the definition of "low" desire is highly biased because it is based on male standards and male needs. They argue that an arbitrary standard of sexual desire has been created and that the attenuation of desire in women may be "natural" and appropriate and should not be problematized. Instead of telling women that a certain level of desire is "normal" and anything different from that is a problem that needs to be fixed, they suggest that we normalize the continuum of desire that clearly exists among women, especially post-menopausal women.

So Why All the Fuss About Testosterone?

Testosterone has received much attention in many ways because it seems like a potentially quick fix. Unfortunately, the role of testosterone in sexual arousal and behavior is anything but straightforward and while looking for

medical answers to a lack of sexual interest is reasonable and may have worthy outcomes, the fact is that at present we do not have a simple explanation for lower sexual desire or difficulties with arousal. While we know testosterone has a role, we can't pinpoint it precisely, which means we can't simply say add some more and all will be fine. Most sex therapists believe that except for severe hormonal deficiencies (which may need a medical answer), the answer for most sexual issues will be found by looking more closely at psychological, emotional, and relationship issues.

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Myth #6

Everyone Is Born Either Male or Female

Sometimes it seems like every television show and movie we watch has to have a birth scene in it. Whether it's an hour-long hospital drama (remember *Grey's Anatomy's* Bailey refusing to push because her husband was having brain surgery down the hall), a network sitcom (poor *How I Met Your Mother's* Lily went into labor while her husband was falling down drunk in Atlantic City), a Disney channel half-hour comedy made for tweens (the mom on *Good Luck Charlie* has now been seen giving birth twice), or the climax of a blockbuster movie (who can forget the famous crotch/crowning shot in *Knocked Up*), women are constantly giving birth on the big and little screen.

The scene in the hospital room (or the car or the elevator—because fictional babies always seem to come super-fast and at the worst moments) plays out differently depending on whether the goal is to mimic real life drama or go for the cheap laughs, but it always ends the same way with

someone happily proclaiming: "It's a Boy!!!" (Okay, sometimes it ends with "It's a Girl!" But you get our point.)

In Hollywood, this big moment is simple; the doctor peeks between the baby's legs and makes the all-important proclamation and the parents are always surprised (even though many of today's parents know the sex months before delivery through prenatal tests) and delighted (that is after the dad who dreamt of a son melts the first time he holds his daughter).

For some parents in real life, however, it not possible for the doctor to proclaim boy or girl just by looking at their infant.

Ultimately, our gender is based on *biological sex* which is determined by our chromosomes, hormones, and internal and external genitalia. As we grow, we learn how males and females are expected to behave (known as *gender roles*), decide how we want to present our gender to the world (*gender expression*), and develop our own internal sense of whether we are male or female (*gender identity)*. Though much of society—from the media, to the fashion industry, to every modern toy store—would like us to believe that there are only two choices, many think that gender rests on a continuum with male and female at either end and many (if not most) people residing somewhere in between.

In this entry, we are going to focus on variations of *biological sex* and what happens when someone's biological sex is not firmly male or female. Later in the book (Myth #9) we cover gender roles and gender identity in more detail and look at what happens when a person is transgender, which means that their internal sense of gender identity does not match their biological sex or the gender roles society expects of them. Though these two issues are inextricably linked for some people, we believe it is important to look at them separately.

Variations in Biological Sex

As we often do when addressing a long-standing myth in human sexuality, we have to start this entry with a review of basic biology. We apologize if we are repeating things you learned in ninth grade but we are pretty sure that you didn't hear it all back in high school.

Sperm and ova (eggs) are known as gametes. They each carry 23 individual chromosomes that, when they come together, become the 23 pairs of chromosomes that make up our unique genetic identity. One of those pairs of chromosomes determines our biological sex. Ova always (or almost always—more on that later) carry one X chromosome while sperm typically carry either an X or a Y chromosome. When they come together and everything goes according to plan, an embryo with XX chromosomes develops into a female while one with XY chromosomes develops into a male.

All fetuses start out with two undifferentiated gonads and certain homologous structures that can become either male or female sex organs. There is a specific section of the Y chromosome (called the TDF or testes-determining

factor region) that sends a signal to the gonads telling them to develop into testes. The testes in turn begin to produce testosterone which sets the rest of the fetal development on a path toward becoming male. This means that homologous structures in the fetus (structures that start out the same) will turn into the internal reproductive system (such as the Cowper's gland, prostate gland, seminal vesicles) and the external male genitalia (the penis and scrotum).

Without TDF, the gonads become ovaries and produce estrogen instead of testosterone. The fetus then develops along a female path meaning that these homologous structures will become a uterus, fallopian tubes, and a vagina internally, and externally they will develop to form the labia minora, labia majora, clitoris, and the vaginal opening. (Since we are reviewing here, let us remind you that these are not all of the internal and external parts in either male or female reproductive systems.)

Though the majority of babies born will have followed one of these two paths, there are many points along the way where things can diverge from these paths.

Chromosomal Anomalies

Like life itself, these anomalies can start with the egg or the sperm. Though each gamete is supposed to have only one sex chromosome, things can happen during meiosis (the process of cell separation) that cause them to have more than one or none. This means that an embryo can begin to develop with too many or too few sex chromosomes. These are some of the more common conditions that can result.

- **Turner syndrome**, XO, develops when either the egg cell or the sperm cell does not have a sex chromosome at all. Individuals who are born with Turner syndrome have external female genitalia and internal female reproductive organs (ovaries, uterus, and fallopian tubes) but the ovaries are not functional and do not produce estrogen during development. Females with Turner syndrome are usually short, have a broad chest with the nipples way out to the sides, and have low ears. They may have congenital heart defects as well. They will not develop secondary sex characteristics on their own. They are often given human growth hormone during childhood to help them grow taller and estrogen therapy after puberty to increase their development of secondary sex characteristics (Mader, 1992, p. 17).
- **Klinefelter syndrome,** XXY, happens when an egg with two X chromosomes is fertilized by a sperm with a Y chromosome or an egg with an X chromosome is fertilized by a sperm with both an X and a Y. These individuals will appear male when born but some abnormalities including small testes, a female pattern of pubic hair, poor muscle development, and a lack of facial hair may begin to be noticed as the individual reaches puberty (Mader, p. 19). Males with Klinefelter syndrome tend to have long limbs, broad hips, and some learning

disabilities (especially in verbal skills). These men are also infertile. In fact, many men with the condition find out they have it as adults because they are having trouble conceiving. Those who find out at birth or during puberty can be treated with testosterone to help bring on secondary sex characteristics (Kelly, 2010, p. 101).

- **Supernumerary Y syndrome,** XYY, happens when an egg with one X chromosome is fertilized by a sperm with two Y chromosomes. These males are usually taller than average but have no other outward symptoms. Most males with XYY syndrome have normal sexual development and are fertile. However, males with XYY may be at higher risk for learning disabilities, including delayed development of speech and language skills. They may also face delayed development of motor skills, weak muscle tones, hand tremors, and other motor tics. The syndrome has also been associated with behavioral and emotional difficulties (Kelly, p. 101). It was once suggested that these males had higher aggression and were more likely to be in prison than other males but that theory has since been disproven (Mader, p. 19).
- **Triple X syndrome, also known as meta-females,** XXX, develops when an egg cell that has two X chromosomes is fertilized by a sperm cell with an X chromosome of its own. Individuals with three X chromosomes may never know it as they most often have no physical abnormalities. However, they might have menstrual irregularities, suffer from fertility issues, and go through menopause at an early age (Mader, p. 19).

There are other variations as well. A fetus could have XO/XY which would mean it will develop either male or female genitals or some combination but likely have no other issues. The fetus could also have both XX/XY which would mean that it could develop some combination of ovaries and testes and would likely have a uterus. The external genitals could be male or female or some combination. At puberty, individuals with XX/XY usually grow breasts and begin to menstruate (Kelly, p. 101). It is important to note that there is no syndrome from embryos with YO sex chromosomes because at least one X is required for survival. Any embryo that has just a Y chromosome will result in a spontaneous abortion or miscarriage.

Hormonal Anomalies

While chromosomes set a fetus on the path toward its biological sex, how the fetus develops is also very much controlled by the hormones it is exposed to while *in utero* (and after birth) and how the body processes these hormones. Again, there are many things that can go differently during development but these are some of the most common.

- **Androgen insensitivity syndrome (AIS)** occurs when the body cannot process male sex hormones (known as androgens). When this happens in someone who is genetically male (XY), the process of developing a male reproductive system and male genitalia is interrupted. The TDF

region will tell the undifferentiated gonads to become testes and the testes will produce testosterone but, because the body cannot process this hormone, the fetus will develop along a female path and will appear female when born with their external genitalia appearing as labia. The internal reproductive organs, however, will not have developed completely. The baby will be born with a shortened vagina and will not have a uterus (Blonna and Levitan, 2005, p. 119). The baby will also have testes which will most often be located somewhere in the abdomen. After puberty, individuals with AIS are often given estrogen replacement therapy to help develop female secondary sex characteristics. They may also have to have their testes removed as these can become cancerous (Kelly, p. 105). Though people with AIS are genetically male, most identify as female.

- **Congenital adrenal hyperplasia (CAH)** is a disorder of the adrenal glands (there is one adrenal gland located on each of our kidneys) which causes a buildup of androgens in a fetus and infant. If this happens in someone who is genetically male it can cause sex characteristics to appear too early. Males with CAH may have a deepening voice, an enlarged penis (though normal testes), pubic hair, armpit hair, and well-developed muscles before puberty. Genetic females (XX) with some forms of CAH will usually have normal internal reproductive systems (ovaries, uterus, and fallopian tubes) but may have an enlarged clitoris at birth. In some instances the clitoris may be so large that it is mistaken for a penis. They may also develop pubic hair and armpit hair before puberty and may develop facial hair as well. There is also evidence that females with CAH tend to develop a male gender identity (Kelly, p. 105).
- **DHT deficiency** is a problem that affects genetic males (XY). *In utero* these males do not produce enough of a hormone called dihydrotestosterone (DHT) which has a critical role in male sexual development, including the development of the external genitalia. Many people with this deficiency are born with external genitalia that look female, others are born with external genitalia that appear male but are unusually small (sometimes called a micropenis). Still others will be born with what is called ambiguous genitalia where it is hard to tell whether they are male or female just by looking. During puberty, people with this condition often develop male secondary sex characteristics such as increased muscles, deeper voices, and pubic hair. Their penis and scrotum often grows larger as well. Despite the fact that many have been raised as females, they do not develop breasts or other secondary sex characteristics (Kelly, p. 105).

Evolving Language

In the old days, anyone born with ambiguous genitals of any kind would have been called a hermaphrodite. The medical definition of a true

hermaphrodite, however, means someone who has both ovaries and testes. Most people with the conditions mentioned above do not fit into that category. Some medical professionals make the distinction of pseudohermaphrodites noting that someone with testes (but no ovaries) and some female genitalia would be a male pseudohermaphrodite and someone with ovaries (but no testes) and some male genitalia would be a female pseudohermaphrodite.

In 1993, Anne Fausto-Sterling, a biologist who frequently writes about gender, wrote an article for *The Sciences* magazine in which she suggested we should recognize five biological sexes. In addition to males and females, she suggested adding "herms" (named after true hermaphrodites), "merms" (named after male pseudohermaphrodites), and "ferms" (named after female pseudohermaphrodites). In a follow-up essay, she admits that her "tongue was planted firmly in cheek" when she suggested these names but that her point was clear; the two-sex system that is so deeply embedded in our culture is not sufficient to "encompass the full spectrum of human sexuality" (Fausto-Sterling, 2000, p. 19).

Though the concept of five sexes might seem crazy to some of us, other cultures have been more open to recognizing those who do not fit into the male and female categories. There is a village in the Dominican Republic, for example, where a genetic mutation has meant that many babies are born with DHT deficiency. These babies have genitals that look female during childhood but once exposed to testosterone during puberty they develop male secondary sex characteristics. Villagers have given these men the name *guevedoche*, which means "balls at twelve." They are also sometimes referred to as *machi-embra* (male-female) (Herdt, 1990). The important part is that over the generations they have been accepted at least to some degree as a third sex. The Sambia tribe of Papua New Guinea also has a similar genetic mutation and has seen many children born with genitals that appear to be female at birth but eventually develop male secondary sex characteristics. These individuals are assigned the name *kwolu-aatnwik* and are not expected to take on either male or female gender roles in the society. They are allowed to become spirit doctors or shamans (Kelly, p. 97).

In the Western world there is no real agreement even now as to what we should call an individual whose biological sex is not easily categorized. The same year that Fausto-Sterling suggested five sexes, activists founded the Intersex Society of North America (ISNA). According to its website: "The Intersex Society of North America (ISNA) is devoted to systemic change to end shame, secrecy, and unwanted genital surgeries for people born with an anatomy that someone decided is not standard for male or female." As its name suggested, the ISNA proposed using the term intersex as "general term used for a variety of conditions in which a person is born with a reproductive or sexual anatomy that doesn't seem to fit the typical definitions of female or male." While this terminology became popular for a number of years some still found it to be "pejorative to patients" and "confusing to practitioners and parents alike" (Lee *et al.*, 2006, p. e.488).

New guidelines put out by experts in the field and supported by the ISNA (which has now closed its doors) propose using the term "disorders of sex development" (DSD) and defining this as "congenital conditions in which the development of chromosomal, gonadal, or anatomic sex is atypical" (Lee *et al.,* p. e488). Not everyone is happy with this language either, primarily because it begins with the term disorders. Some activists and people living with DSD believe that this further marginalizes their identities.

Evolving Treatment

If we don't have the language to even talk about those born with disorders of sex development, imagine how hard it must be for parents of these infants to figure out what to do. In the United States there has historically been a rush to fix that which is not "normal." In many cases this has meant that parents are told that their infant needs to have surgery to make their genitals appear more like an average clitoris or penis. In truth though, it has always been much easier to create labia and a vagina than it has been to create a penis (especially one that functions). Most of the time, therefore, doctors would recommend that parents surgically create female genitalia and begin to raise the infant as a girl regardless of the chromosomal sex or what hormones the infant was exposed to *in utero*.

This is what happened to Cheryl Chase, the founder of ISNA. She was born in 1956 with ambiguous genitalia—she had what could have been an enlarged clitoris or a micropenis and something that appeared to be a vaginal opening. At first doctors recommended that she be brought up as a boy so she went home from the hospital with the name Charlie. But her parents were concerned about the appearance of her genitals and consulted another team of experts when she was 18 months old. Based on the fact that she had a fairly normal vagina, these experts recommended surgery to make her external genitals look more female. She underwent a clitoridectomy and was sent home as Cheryl. Her parents never told her what had happened and she remembers many unexplained surgeries and genital exams during her childhood. She also remembers not fitting in with the other girls: "I was more interested in guns and radios and if I tried to socialize with any kids, it was generally boys, and I would try to best my brother" (Colapinto, 1997).

Fausto-Sterling notes the case of Max Beck who was born with disorders of sex development and was surgically assigned female. Though comfortable in that identity through her teens, Max first came out as butch lesbian in her twenties and then in his mid-thirties became a man. He is now married to a female partner and they have had children (through reproductive technologies).

Interestingly, the most famous test case of gender reassignment in children did not involve someone who had a disorder of sex development at all. Instead, the case involved identical twin boys who were born in 1965 with identifiably male sex organs. At 8 months old they underwent circumcision

because they were suffering phismosis (a condition in which the foreskin will not pull back). There was a serious accident during the procedure and one twin essentially lost his penis. His parents had few choices and little hope as the doctors they saw all said they could not rebuild a penis that would either look normal or function properly.

The parents then found out about a doctor at Baltimore's Johns Hopkins Hospital who was researching and performing sex reassignment surgeries. Dr. John Money was a pioneer in the field of gender and had a theory that gender was a purely cultural concept that came from how kids were raised especially early in their lives. He believed that infants are born as blank slates and it is not until their parents and society imprint them with gender that they begin to see themselves as either male or female.

Money met with the parents of the infant (then named David) and assured them that if they allowed surgeons to construct external female genitalia and then raised the child as a girl, "she" would be capable of growing into a well-adjusted young women. Money was particularly interested in this case because as an identical twin David came with a control group. If "she" could be successfully raised as a female while her brother (who had her exact genetic make-up) was successfully raised as a male, it would go a long way toward proving Money's blank slate theory.

The parents took Money's advice, the surgery was carried out, and they proceeded to raise David as Brenda. Money followed the case, which he always referred to as "John/Joan," and repeatedly published articles about its success in which he described "Joan" as a happy, well-adjusted girl who had easily adopted more female roles and characteristics. In 1973, *Time* magazine pointed to Joan saying, "This dramatic case provides strong evidence for a major contention of women's liberationists: that conventional patterns of masculine and feminine behavior can be altered. It casts doubt on the theory that major sexual difference, psychological as well as anatomical, are immutably set by genes at conception" (Colapinto, 1997).

It is unclear if Money failed to notice the truth or deliberately ignored it but Brenda's family tells a very different story. Her brother tells it this way: "I recognized Brenda as my sister but she never, ever acted the part. She'd get a skipping rope for a gift, and the only thing we used it for was to tie people up, whip people with it." He went on to say, "When I say there was nothing feminine about Brenda, I mean there was nothing feminine. She walked like a guy. She talked about guy things, didn't give a crap about cleaning house, getting married, wearing makeup" (Colapinto, 1997). Brenda's mother claims that the very first time she put a dress on her, the little girl tried desperately to pull it off.

Everyone describes a miserable childhood of feeling different and not fitting in anywhere. Brenda realized early on that she was not a girl in many ways starting perhaps with her preference for peeing standing up. When Brenda imagined her future, she pictured herself living as a man married to a woman.

Though she reluctantly began taking hormones as a young teenager and as a result grew breasts, Brenda refused to see Dr. Money any more and began

to be treated by doctors and psychologists closer to home. One day when she was 14, she met with a doctor who was trying to convince her to have the surgery that would be needed to finish creating a vagina but Brenda kept refusing. The doctor asked in exasperation "Do you want to be a girl or not?" Brenda answered, loudly, "No." The doctor then told her parents that he thought it was time to tell Brenda the truth.

David remembers hearing the story from his father that afternoon and feeling a number of conflicting emotions, the overwhelming one, however, was relief. He instantly changed his name back to David and began the process of going back to living as a boy. He had his breasts surgically removed and then had a rudimentary penis constructed right before he turned 16. Another operation in his twenties created a better looking and more functional penis.

When the real result of John/Joan's case became public in the mid-1990s, David was 31, married to a woman, and raising the children she had from previous relationships as his own. He said he was happy living as a man but acknowledged that getting there was not easy and that he had even contemplated suicide a number of times. Unfortunately, the happiness did not last; in 2004 David Reimer took his own life (Colapinto, 2004).

Today's Thinking

Based on cases like Cheryl Chase and John/Joan, the prevailing wisdom today suggests that rushing into surgery—which has permanent repercussions—for purely cosmetic reasons is a bad idea. Some conditions do require early surgery for functional reason (such as separating the vagina from the urethra) or safety (such as removing testes located within the abdomen as they can become cancerous. ISNA helped to convene an International Consensus Conference on Intersex. One of the major outcomes of the conference was a consensus document written by the Lawson Wilkins Pediatric Endocrine Society in the United States and the European Society for Pediatric Endocrinology.

The overall advice is to take it slow and not treat the situation as a medical emergency that requires immediate intervention. The consensus statement suggests that health care providers should avoid making any gender assignment before an expert evaluation is conducted and that such an evaluation should be made at a center with an experienced multidisciplinary team (ideally that team would include pediatric endocrinologists, surgeons, urologists, psychologists, gynecologists, geneticists, and neonatologists who have experience with DSD). The team will make a diagnosis based on anatomy, genetics, imaging (such as ultrasound or MRIs), and measurement of various hormone levels.

In a culture that instantly categorizes everyone based solely on appearance and doesn't even have the proper pronouns to talk about someone without referring to gender, the task of raising a child without an identified gender is practically impossible and unadvisable as it can be troubling to the family and the child. Instead, the guidelines suggest that every infant be assigned a

gender. This assignment should be made based on the diagnosis, genital appearance, surgical options, need for lifelong replacement therapy (such as estrogen shots), potential for fertility, and the views of the family and culture.

However, the idea is that this gender assignment can change if it turns out to be inconsistent with how the baby feels as he or she grows up. The consensus statement explains that atypical gender behavior is common in those born with DSD and should not be seen as an indicator that the gender was wrongly assigned or should be changed. That said, if affected children or adolescents report "significant gender dysphoria" (a sense that their gender identity does not match the gender they've been assigned), they should be given a comprehensive psychological evaluation and an opportunity to explore gender issues with a qualified professional over time. "If the desire to change genders persists, the patient's wish should be supported and may require the input of a specialist skilled in the management of gender change" (Lee, p. e493).

These new guidelines recognize that the process of developing a gender identity (even for people born with a clear biological sex) is complicated and ever evolving. The approach that they are recommending therefore is one of caution which leaves all irrevocable decisions to be made by the individual when he/she has developed an internal sense of who they are.

These guidelines represent a major step forward in how we think about biologic sex and how we handle differences. Nonetheless, we are still a society that tries to categorize people as male or female and masculine or feminine. While we certainly tolerate more variations in gender roles and expressions than we once did, we still hold onto many stereotypes about how an individual should look and behave. As we see later in the book when we explore gender roles, gender identity, and transgender issues more closely, we still have a lot of work to do in dispelling myths about what makes someone a man or a woman. This much is clear—it is more than just what is between someone's legs.

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