Women are not Men – Returning to the Obvious

Evolution tells us women are the more significant half of mankind. Pharmacology, medicine, and public health should be more aware of their unique condition.

Evolution decided that sexual reproduction is beneficial. Generally, the resulting genetic variability is believed to improve environmental adjustments and immunity. On the other hand, delirious mutations are possible. Whether evolution was well-advised to resort to sexual reproduction is still under discussion (1). Anyhow, the decision was made, and the female has the most significant burden for assuring the survival of the human species. The male, after mating, is superfluous, at least so for certain animals, such as several insects, but also some octopuses and snails, so males are killed or even eaten to make good for the energy needed to deliver and care for the offspring (2).

Mankind adopted a kinder way. Expressively, at the beginning of the twenty-first century, an attempt was made to correct evolution. To avoid being terminated by the female (probably not the only reason for the LGBTQ arena), it was declared that sex is a social construct.

From Joe to Donald

Besides the cynicism, it is true that because of the fear of being attacked by the gender mainstream, scientists hesitated to carry out research about differences between males and females in genetics, health, and medicine (3). One of the serious problems of the gender mainstream ideologies is that addressing differences between cismen and ciswomen clearly works within a binary categorization scheme, an unforgivable sin in the gender issue (4). That prompted US President Biden in March 2024 to make clear with an Executive Order that 'women's health research be considered a priority, not an afterthought' (5). Two leading scientific magazines, Nature and Science, responded with suitable comments and publications (4, 6).

The action of the outgoing president did not intend to work against the gender mainstream, but on January 20th, 2025, his successor, shortly after being sworn in, declared, at least for the US, that mankind has only two different sexes, male and female, by this ignoring the gender agenda. This, at least in the US, will further break down barriers to research the difference between sexes and hopefully work against the archetypically accepted misunderstanding that man alone represents mankind.

Superiority of man

Throughout history and up to now, men have placed themselves superior to females. Men might have sensed quite early in history that they, as a single individual, are superfluous for fulfilling the main task of evolution, namely the reproduction of the species. Biologically, any other human male can serve the same purpose. Making females accept his dominant position, religion plays a distinguished role. While female Gods are still featured in the afterworld in ancient Greece and Rome, this has been corrected for the monotheistic religions, i.e., Islam, Christianity,

and Judaism. Mohamed is the Prophet, and in the Bible, Eva was created from the rib of Adam. In Buddhism, Monks and not Nuns dominate the religion.

Adverse drug reactions (ADRs) and women

The view that the body of man represents mankind found its way into pharmacology in that female participants in clinical trials are grossly underrepresented (6). As mentioned in previous entries, an example is the drug lecanemab, which was proclaimed to be a treatment for Alzheimer's, but that was only true for men and not for females (7, 8). Similar to clinical trials, also in laboratory research mainly male animals are used. A study in ten biological fields found that 26% of trials with male species resorted to both sexes of laboratory animals. Male 'bias' was common in eight disciplines, mainly related to neuroscience (9).

The commonly known thalidomide catastrophe happened because, from 1977 to 1993, women of reproductive age were excluded from phase one and phase two in clinical trials. So, it was overlooked that the drug, which was extensively used by pregnant women against morning sickness in Europe and Australia, caused severe birth defects (10, 11). Still, between 1997 and 2000, eight prescription drugs were withdrawn from the US because females had a greater risk of developing health problems (12).

In short, adverse drug reactions (ADRs) are due to sex differences in pharmacokinetics and are almost two times more often seen in women compared to men. How drugs are channeled through the organism includes absorption, distribution, bioavailability, metabolism, and excretion, and at each step, sex-relates ADRs might strike. Even so, disregarding sex differences, the standard dose is set for a 70 kg male, and the prescription dose doesn't differ between sexes (13). Underlining the opportunity for women's different reactions to pharmacological therapy contrasted to men are the sex hormones, which play a significant role in the metabolism of drugs (14). The sexual dimorphism in the response to medication might even be aggravated through differences in the genetics of different ethnicities. This mainly has been observed for Europe, Africa and East Asia (15).

Mendelian diseases and the 97% genetic junk

The differences in genomics between men and females are not restricted to ADRs. Asking 'Google' about genetic differences between sexes, the answer suits the gender belief of sex as a social construct well, quoting that the 'only physical difference in the genetic makeup are the sex chromosomes.' Otherwise, both sexes 'have practically the same set of about 20,000 genes.' This misleading statement even avoids mentioning that there are important genes located at the so-called sex chromosomes that are not related to reproduction (16).

When just looking at Mendelian diseases (genetic diseases), 97% of the 3.2 billion bases seemed to have no function and were labeled as 'junk.' The 'junk, however, turned out to function as non-coding DNA (ncRNA) in the expression of the genes (17). In the investigation of 20.000 ncRNA, around 6,500 genes were identified as differently expressed between sexes (18).

ncRNA and sex as a social concept

Realizing that ncRNA and gonadal hormones act to distinguish the two sexes earnestly distrusts the gender ideology. The complex development after conception from the bipotential adreno-genital primordium (AGP) in finally a male or female newborn has been outlined previously (19), as well as challenging the background of the gender mainstream (3). It is difficult to disregard that there are genes, and not social involvement, highly expressed by men instead of women functioning in the growth of body hair or other genes highly expressed in women, less in men, instrumental in fat storage (20). Likewise, the different expressions of genes between men and females in the brain determine behavior, stress response, sexual attraction, and the occurrence of neurological diseases (21). Particular intellectual abilities are different and higher skilled among the sexes. Men are better at 'spatial' tasks (22) and mathematics (23), while women are better at argumentation, articulation, and memory (24).

Don't argue with a female – she is genetically better equipped

For instance, arguing about the correct direction among couples while driving a car might be genetically motivated since men are better at orientating through the general direction. At the same time, 'verbal fluency' is the domain of women. Consequently, it is better for her to follow her husband to turn right instead of left, as she suggests since they finally will end up at the Laotian border and not, as intended, in Korat. However, she is probably right that the shoe shop she wants to visit is on the next corner and not two intersections apart. In most cases, the sensible husband knows that going into a heated, controversial political argumentation with his beloved wife is not advisable (see Table 3 (21)).

The influence of the sexual genetic setting on the brain, behavior, and immunity

Experiments with rats suggest distinct differences in sexual interest towards casual sex, multiple sex partners, and visual-sexual stimuli due to the genetic setting. Yet, it is easier to study this in rodents and less evident in humans. 'Neuroanatomical' differences are identified, but ethical considerations prevent experimental studies. It cannot be ruled out that social and environmental influences are also at work for humans. Yet, sex differences in the occurrence of neurological diseases and pathological-related behavior exhibited by patients can hardly be solely accounted for by social influences. Depression is twice as high in women before the menopause. At older ages, women have a higher risk of suffering from Alzheimer's disease compared to men, who might be afflicted at an earlier age. Men are more prone to Parkinson's disease and autism (see Table 4 (21)).

The far-reaching sex differences in the brain and behavior are not the only proof of the differences between men and women. Immunity is critical to fighting against harmful stimuli and organisms and reacts differently in both sexes. Tissue-specific immunity, together with age, diet, and other 'life course factors' influenced by sex hormones, is decreased in males and increased in females for antiviral immunity, antitumoral immunity, and the risk of asthma (25). The genetic background for autoimmune diseases, particularly for women, was revealed recently (19).

The longer life of females

While contradicting the gender ideology, focusing on biological facts certainly cannot neglect environmental and lifestyle factors determining sexual differences. Yet, an interplay between genetics and the various facets of the environment through epigenetic patterns could be considered, such as the well-known generally longer lives of females, even under extreme events. Surveys are underway to identify epigenetic mechanisms to explain the phenomenon. Hypermethylation of the Y chromosome of certain alleles was related to the risk of all causes of mortality in Chinese cohorts. Still, it could not be repeated by findings from European octogenarians. The better survival probability of females could be due to the combined circumstances, such as the environment in early life, mitochondrial DNA (mDNA) methylation, the environment while getting older, and autosome genetic variability (26). Again, evolution might account for the generally longer life of females so that they can care for more time for their children.

Conclusion

Evolution promotes the reduplication of the species and eradicates faulty developments in sorting out faulty genetic developments. The phenomenon might be executed differently between the sexes. It is known in the US that about 15% of couples can't have children as hard as they try. Responsible is a mutation of genes in sperm formation in men. Usually, evolution will not allow this flaw for reproduction and quickly wipe this out. In this case, it only occurs in men and not women, who are more important for reproduction, so the mutation could persist in men. It might be theorized that males and females underwent some separate parallel evolution (18, 20). This philosophical theorem cannot become a leading political fundament in starting to reverse neglecting research on females in the past and now giving minor attention to the health and well-being of males instead.

In curative medicine, attention should be given not only to the disease as such but also to whether the patient is a woman or a male. Far-reaching female-specific conditions in common groups of diseases will be reviewed in several entries followed by this blog. In public health, in primary and secondary prevention, the focus of initiatives should be particularly aware of differences in the distinctive two parts of the population. This has worked successfully for primary health care, as mother and child health care has improved considerably in Thailand (27).

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