

# International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com](http://www.ijirset.com) / Impact Factor: 7.249/

Vol. 8, Issue 12, December 2019

## CHEMICAL CASTRATION PROCESS

Dr. AnilKumar

Dept. of Chemistry, D.A.V. [P.G.] College, Dehradun, India

**ABSTRACT:** Chemical castration is castration via anaphrodisiac drugs, whether to reduce libido and sexual activity, to treat cancer, or otherwise. Unlike surgical castration, where the gonads are removed through an incision in the body,<sup>[1]</sup> chemical castration does not remove organs, nor is it a form of sterilization.<sup>[2]</sup> Chemical castration is generally reversible when treatment is discontinued,<sup>[3]</sup> although permanent effects in body chemistry can sometimes be seen, as in the case of bone density loss increasing with length of use of depot medroxyprogesterone acetate (DMPA). When used on males, these drugs can reduce sex drive, sexual fantasies, and capacity for sexual arousal. Life-threatening side effects are rare, but some users show increases in body fat and reduced bone density, which increase long-term risk of cardiovascular disease and osteoporosis, respectively. Males may also experience gynecomastia (development of larger-than-normal mammary glands in males); full development is less common unless chemical castration is combined with feminizing oestrogen therapy.<sup>[5]</sup> When used on females, the effects are similar, though there is little research about chemically lowering female's sex drive or female-specific anaphrodisiacs, since most research focuses on the opposite, but anti-androgenic hormone regimens would lower testosterone in females which can impact sex drive or sexual response.<sup>[6][7][8]</sup> These drugs also deflate the breast glands and expand the size of the nipple. Also seen is a sudden shrinking in bone mass and discoloration of the lips,<sup>[9][10]</sup> reduced body hair,<sup>[11]</sup> and muscle mass.<sup>[12]</sup>

**KEYWORDS**-chemical,castration,anaphrodisiac,drugs,sex,drive,sterilization,cancer

### I. INTRODUCTION

The first use of chemical castration occurred in 1944, when diethylstilbestrol was used with the purpose of lowering men's testosterone.<sup>[13]</sup> The antipsychotic agent benperidol was sometimes used to decrease sexual urges in people who displayed what was thought of as inappropriate sexual behavior, and as likewise given by depot injection, though benperidol does not affect testosterone and is therefore not a castration agent. Chemical castration was often seen as an easier alternative to life imprisonment or the death penalty because it allowed the release of the convicted.<sup>[14]</sup>

In 1981, in an experiment by Pierre Gagné, 48 males with long-standing histories of sexually deviant behaviour were given medroxyprogesterone acetate for as long as 12 months. Forty of those subjects were recorded as having diminished desires for deviant sexual behaviour, as well as less frequent sexual fantasies and greater control over sexual urges. The research recorded a continuation of this improved behaviour after the administration of the drug had ended, with no evidence of adverse side effects, and so recommended medroxyprogesterone acetate along with counselling as a successful method of treatment for serial sex offenders.<sup>[15]</sup>

Leuprolide acetate is an LHRH agonist that is most commonly used in chemical castration today.<sup>[16]</sup> This drug has been observed as having higher rates of success in reducing abnormal sexual urges and fantasies, but is often reserved for those offenders who are at a high risk of reoffending due to the drug's intense effects.<sup>[17]</sup>

Psychotherapy has also recently been used in conjunction with chemical castration in order to maximize and prolong the beneficial results.<sup>[18]</sup> Schober et al. reported in 2005 that when cognitive behavioral therapy combined with

# International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com/](http://www.ijirset.com/) Impact Factor: 7.249/

Vol. 8, Issue 12, December 2019

leuprolide acetate was compared to cognitive behavioral therapy alone, the combination therapy produced a much more significant reduction of pedophilic fantasies and urges as well as masturbation.<sup>[19]</sup> Chemical castration therapy reduces an individual's libido which then makes some offenders more responsive to the introduction of psychotherapy.<sup>[20]</sup> This combination therapy is most often utilized in those who are at a high risk of offending.<sup>[18]</sup>

Offering criminals the option of chemical castration for a reduction in sentence is an example of compulsory sterilization<sup>[21]</sup> as it can leave a subject sterile if they are required to continue treatment for more than 3 years.<sup>[22]</sup>

## Scientific critique

Spaying is observed to cause female animals to stop mating in the same way as castration causes male animals to stop mating. However, in animal species where females continue their mating behaviour after being spayed, the males also continue to mate after being castrated. So there are scientists who argue that it makes no biological sense to assume that any treatment that emulates castration would remove sex drive in men but not in women. These scientists argue that these observations, along with the fact that humans are animals and subject to evolution, show that it is flawed to think that male sexuality would be treatable by medication if female sexuality is not.<sup>[23][24]</sup>

Some criminologists argue that the appearance of a lower recidivism rate in male sex offenders who take chemical castration treatment than in those who do not can be explained by factors other than biological effects of the medication. One hypothesis is that men who accept the negative effects of hormonal treatment in exchange for shorter prison sentence are distinct in that they value freedom from incarceration higher than men who rather stay in prison for a longer time than face the side effects of chemical castration. These criminologists explain apparently lower recidivism as an artifact of men who accept chemical castration being more engaged in hiding the evidence for reoffending, and that paroling such offenders constitute a risk of releasing criminals who commit as many new crimes as others but are better at hiding it. These criminologists also argue that police investigators treating castrated men as less likely to reoffend than non-castrated men may cause an investigation bias and self-fulfilling prophecy, and that men who sell some of their prescribed medicines on the black market for drugs get a hidden income that improves their ability to afford measures to hide recidivism that is not available to men without such prescriptions.<sup>[25][26][27]</sup>

Some neurologists acknowledge that testosterone plays a role in sexual arousal but consider that reducing sex drive will likely not reduce inappropriate sex behaviour. These researchers argue that since a weaker internal signal in the brain means a higher requirement for external stimulation to create a feedback loop that tires the brain circuits out as in orgasm and lead to satisfaction, a reduction of the internal stimulation from hormones would make the required external stimulation stronger and also more specific, as weaker signals involve narrower ranges of other brain functions in their loops. These scientists therefore argue that the biological (as opposed to sociological) effect of reduced testosterone is to make it more difficult and not easier to use masturbation without pornography or other socially acceptable substitutes to manage remaining sex drive in a former offender, and that many community persons (both male and female) find that a lower initial arousal makes it more difficult to orgasm by masturbation without pornography or with non-preferred stimulation.<sup>[28][29]</sup>

## II. DISCUSSION

In 1966, John Money became the first American to employ chemical castration by prescribing medroxyprogesterone acetate (MPA, the base ingredient now used in DMPA) as a treatment for a patient dealing with pedophilic urges. The drug has thereafter become a mainstay of chemical castration in America. Despite its long history and established use, the drug has never been approved by the FDA for use as a treatment for sexual offenders.<sup>[13]</sup>

# International Journal of Innovative Research in Science, Engineering and Technology

*(A High Impact Factor, Monthly, Peer Reviewed Journal)*

Visit: [www.ijirset.com/](http://www.ijirset.com/) Impact Factor: 7.249/

**Vol. 8, Issue 12, December 2019**

California was the first U.S. state to specify the use of chemical castration for repeat child molesters as a condition of their parole, following the passage of a modification to Section 645 of the California penal code in 1996.<sup>[32][33]</sup> This law stipulates castration for anyone convicted of child molestation with a minor under 13 years of age if they are on parole after their second offense. Offenders may not reject the intervention,<sup>[32][33][34][35]</sup> although they may elect surgical castration instead of ongoing DMPA injections.<sup>[36]</sup>

The passage of this law led to similar laws in other states such as Florida's Statute Section 794.0235 which was passed into law in 1997.<sup>[37]</sup> As in California, treatment is mandatory after a second offense.

At least seven other states, including Georgia, Iowa, Louisiana, Montana, Oregon, Texas and Wisconsin, have experimented with chemical castration.<sup>[13]</sup> In Iowa, as in California and Florida, offenders may be sentenced to chemical castration in all cases involving serious sex offenses. On June 25, 2008, following the Supreme Court ruling in *Kennedy v. Louisiana* that the execution of child rapists where the victim was not killed was ruled unconstitutional,<sup>[38]</sup> Louisiana Governor Bobby Jindal signed Senate Bill 144, allowing Louisiana judges to sentence convicted rapists to chemical castration.<sup>[39][40][41]</sup> Alabama passed such a law in 2018.<sup>[42]</sup>

After the outrage following the gang rape of a woman in Delhi, the Government has submitted a draft proposing chemical castration along with an imprisonment of up to 30 years for rape convicts as part of the anti-rape law in India. The ministry is preparing a detailed bill and the recommended changes are under review.<sup>[43][44]</sup> Government is also planning to re-define the Juvenile Act and lower their age. One of the accused in the rape case is a juvenile and aged a few months less than 18 years. A view has been expressed by a section that only those below 15 years should be described as juvenile.<sup>[45][46]</sup>

In 2016, the Indonesian President Joko Widodo introduced a presidential regulation (Government Regulation in Lieu of Law No.1/2016) to allow chemical castration to be handed down as a punishment to child sex offenders and pedophiles. The regulation alters the contents of the 2002 Law on Child Protection (Law No. 23 of 2002).<sup>[47]</sup> DPR later enacted the regulation and amended the law (Law No. 17 of 2016) to enable chemical castration.<sup>[48]</sup> Although, a convicted child sex offender convicted in 2018 and eligible to be castrated chemically, the technical details on how the punishment will be carried out was under debate between the Government and Indonesian Physicians Association, resulting the sentence suspended until the technical details made.<sup>[49]</sup> On 7 December 2018, government finally issued Government Regulation No. 70/2018, that detailing technical details on how chemical castration carried out. The chemical castration punishment carried by specifically appointed physician in central government-run or local government-run hospital, and witnessed by witnesses from Attorney General, Ministry of Law and Human Rights, Ministry of Social Affairs, and Ministry of Health. The drugs used for the sentence however, not declared in the government regulation. The government regulation also authorized Ministry of Law and Human Rights to issue regulation to notify the Attorney General, and Ministry of Health to compile the technical procedure for the clinical assessment, conclusion, and implementation.<sup>[50]</sup> As of January 2017, both derivative regulations not yet published and announced. In 2018, Pakistan's Prime Minister Imran Khan told a journalist that he would prefer that rapists and child molesters be publicly hanged, but he added that, because he imagined that such capital punishment would gain negative attention for Pakistan on the international stage, he would instead like such offenders to "undergo chemical castration, or surgery be performed so they cannot do anything in future."<sup>[52]</sup> The Anti-Rape Ordinance 2018, approved by President Arif Alvi in December 2018,<sup>[53]</sup> allows for chemical castration of rapists without the consent of the offender.<sup>[54]</sup> Lawmakers gave it permanent approval in November 2017.<sup>[55]</sup>

# International Journal of Innovative Research in Science, Engineering and Technology

*(A High Impact Factor, Monthly, Peer Reviewed Journal)*

Visit: [www.ijirset.com/](http://www.ijirset.com/) Impact Factor: 7.249/

**Vol. 8, Issue 12, December 2019**

## III. RESULTS

In the United Kingdom, computer scientist Alan Turing, famous for his contributions to mathematics and computer science, pleaded guilty in 1952 to a charge of gross indecency for engaging in homosexual acts and accepted chemical castration as a term of his probation, thus avoiding imprisonment.<sup>[66]</sup> At the time, homosexual acts between males were illegal and homosexual orientation was widely considered to be a mental illness that could be treated with chemical castration.<sup>[66]</sup> Turing experienced side effects such as gynecomastia (breast enlargement)<sup>[67]</sup> and bloating of the physique.<sup>[66]</sup> He died two years later, with the inquest returning a verdict of suicide.<sup>[68]</sup> In 2009 British Prime Minister Gordon Brown issued a public apology for the "appalling" treatment of Turing after an online petition gained 30,000 signatures and international recognition.<sup>[69]</sup> He was given a posthumous Royal Pardon in December 2013.

A law allowing voluntary chemical castration was created in the UK in 2007 by then home secretary John Reid.<sup>[70]</sup>

On April 30, 2010, a 30-year-old man in the United Kingdom found guilty of attempting to murder a 60-year-old woman in order to abduct and rape her two granddaughters (aged eight and two) agreed to undergo chemical castration as part of the terms of his sentence. He was jailed for a minimum of 10 years at the High Court in Glasgow.<sup>[71]</sup>

The American Civil Liberties Union of Florida opposes the administration of any drug that is dangerous or has significant irreversible effect as an alternative to incarceration; however, they do not oppose the use of antiandrogen drugs for sex offenders under carefully controlled circumstances as an alternative to incarceration.<sup>[39]</sup> Law professor John Stinneford has argued that chemical castration is a cruel and unusual punishment because it exerts control over the mind of sex offenders to render them incapable of sexual desire and subjects them to the physical changes caused by the hormones used.<sup>[74]</sup>

Some people have argued that, based on the 14th Amendment, the procedure fails to guarantee equal protection: although the laws mandating the treatment do so without respect to gender, the actual effect of the procedure disproportionately falls upon men.<sup>[13]</sup> In the case of voluntary statutes, the ability to give informed consent is also an issue; in 1984, the U.S. state of Michigan's court of appeals held that mandating chemical castration as a condition of probation was unlawful on the grounds that the drug medroxyprogesterone acetate had not yet gained acceptance as being safe and reliable and also due to the difficulty of obtaining informed consent under these circumstances.<sup>[13]</sup>

## IV. CONCLUSIONS

A major medical use of chemical castration is in the treatment of hormone-dependent cancers, such as some prostate cancer, where it has largely replaced the practice of surgical castration.<sup>[75][76]</sup>

Chemical castration involves the administration of antiandrogen drugs, such as cyproterone acetate, flutamide, or gonadotropin-releasing hormone agonists.

## REFERENCES

1. "Can Castration Be a Solution for Sex Offenders? Man Who Mutilated Himself in Jail Thinks So, but Debate on Its Effectiveness Continues in Va., Elsewhere" by Candace Rondeaux for the Washington Post, July 5, 2006
2. ^ Meisenkothen, Christopher (1999). "Chemical Castration — Breaking the Cycle of Paraphiliac Recidivism". *Social Justice*. 26 (1): 139–154. JSTOR 29767116.

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com/](http://www.ijirset.com/) Impact Factor: 7.249/

Vol. 8, Issue 12, December 2019

3. ^ "Chemical Castration". [mymcleveland.org](http://mymcleveland.org).
4. ^ Cochrane, Joe (May 25, 2016). "Indonesia Approves Castration for Sex Offenders Who Prey on Children". *The New York Times*. Retrieved 10 May 2015.
5. ^ Kanhai, Robert C.J.; Hage, J. Joris; van Diest, Paul J.; Bloemena, Elisabeth; Mulder, J. Wiebe (January 2000). "Short-Term and Long-Term Histologic Effects of Castration and Estrogen Treatment on Breast Tissue of 14 Male-to-Female Transsexuals in Comparison With Two Chemically Castrated Men". *The American Journal of Surgical Pathology*. 24 (1): 74–80. doi:10.1097/00000478-200001000-00009. PMID 10632490. S2CID 37752666.
6. ^ "Oophorectomy (ovary removal surgery) - Risks". [Mayoclinic.org](http://Mayoclinic.org). Retrieved 16 September 2017.
7. ^ "Oophorectomy Risks". [News-medical.net](http://News-medical.net). 16 August 2010. Retrieved 16 September 2017.
8. ^ Castelo-Branco, C.; Palacios, S.; Combalia, J.; Ferrer, M.; Traveria, G. (11 November 2009). "Risk of hypoactive sexual desire disorder and associated factors in a cohort of oophorectomized women". *Climacteric*. 12 (6): 525–532. doi:10.3109/13697130903075345. PMID 19905904. S2CID 24700993.
9. ^ "Gynecomastia with Anti-androgens". [oncolink.org](http://oncolink.org). Archived from the original on 2016-03-04. Retrieved 2010-02-25.
10. ^ "Anti-Androgen Side Effects". [LIVESTRONG.COM](http://LIVESTRONG.COM).
11. ^ "Antiandrogen Drugs". [TheFreeDictionary.com](http://TheFreeDictionary.com).
12. ^ Can drugs help sex offenders? by Clare Murphy for the BBC, 13 June 2007
13. ^ a b c d e f g "Castration of Sex Offenders: Prisoners' Rights Versus Public Safety" Charles L. Scott, MD, and Trent Holmberg, MD
14. ^ "Bill would impose castration for convicted rapists". *Ocala Star-Banner*. 21 February 1997. p. 4B.
15. ^ Gagné, Pierre (May 1981). "Treatment of sex offenders with medroxyprogesterone acetate". *American Journal of Psychiatry*. 138 (5): 644–646. doi:10.1176/ajp.138.5.644. PMID 6453536.
16. ^ Silvani, Mauro; Mondaini, Nicola; Zucchi, Alessandro (30 September 2015). "Androgen deprivation therapy (castration therapy) and pedophilia: What's new". *Archivio Italiano di Urologia e Andrologia*. 87 (3): 222–6. doi:10.4081/aiua.2015.3.222. PMID 26428645.
17. ^ Turner, Daniel; Briken, Peer (January 2018). "Treatment of Paraphilic Disorders in Sexual Offenders or Men With a Risk of Sexual Offending With Luteinizing Hormone-Releasing Hormone Agonists: An Updated Systematic Review". *The Journal of Sexual Medicine*. 15 (1): 77–93. doi:10.1016/j.jsxm.2017.11.013. PMID 29289377.
18. ^ a b Guay, David R.P. (January 2009). "Drug treatment of paraphilic and nonparaphilic sexual disorders". *Clinical Therapeutics*. 31 (1): 1–31. doi:10.1016/j.clinthera.2009.01.009. PMID 19243704.
19. ^ Beech, Anthony R.; Harkins, Leigh (November 2012). "DSM-IV paraphilia: Descriptions, demographics and treatment interventions". *Aggression and Violent Behavior*. 17 (6): 527–539. doi:10.1016/j.avb.2012.07.008.
20. ^ Garcia, Frederico Duarte; Delavenne, Heloise Garcia; Assumpção, Alessandra de Fátima Almeida; Thibaut, Florence (10 April 2013). "Pharmacologic Treatment of Sex Offenders With Paraphilic Disorder". *Current Psychiatry Reports*. 15 (5): 356. doi:10.1007/s11920-013-0356-5. PMID 23572328. S2CID 11940516.
21. ^ Ginzberg, Janet F. (Fall 1992). "NOTE: COMPULSORY CONTRACEPTION AS A CONDITION OF PROBATION: THE USE AND ABUSE OF NORPLANT". *Brooklyn Law Review*. 58.
22. ^ "Chemical Castration for Sexual Offenders: Physicians' Views". *Journal of Korean medical science*.

## International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: [www.ijirset.com/](http://www.ijirset.com/) Impact Factor: 7.249/

Vol. 8, Issue 12, December 2019

23. ^ Aunger, Robert; Curtis, Valerie (2015). *Gaining Control: How human behavior evolved*. OUP Oxford. ISBN 978-0-19-100284-7.<sup>1</sup>
24. ^ Ruper, Stefani (November 12, 2015). "The Myth of Female Sexual Complexity". *Health to Empower*.
25. ^ Horne, Christine; Lovaglia, Michael J. (2008). *Experiments in criminology and law: a research revolution*. Rowman & Littlefield. ISBN 978-0-7425-6027-7.<sup>1</sup>
26. ^ Sismondo, Sergio; Greene, Jeremy A. (2015). *The Pharmaceutical Studies Reader*. John Wiley & Sons. ISBN 978-1-118-89654-9.<sup>1</sup>
27. ^ Fridell, Lorie A. (2016). *Producing Bias-Free Policing: A Science-Based Approach*. Springer. ISBN 978-3-319-33175-1.<sup>1</sup>
28. ^ Berridge, Kent C.; Kringelbach, Morten L. (May 2015). "Pleasure Systems in the Brain". *Neuron*. 86 (3): 646–664. doi:10.1016/j.neuron.2015.02.018. PMC 4425246. PMID 25950633.
29. ^ Barrett, Lisa Feldman (2017). *How Emotions Are Made: The Secret Life of the Brain*. Houghton Mifflin Harcourt. ISBN 978-0-544-12996-2.<sup>1</sup>
30. ^ Zimasa Matiwane (July 31, 2015). "ANCWL again proposes castration for rapists". *TimesLIVE*.
31. ^ Fontana, Guillermo (March 20, 2010). "Argentina province OKs chemical castration for rapists". *CNN*.
32. ^ a b "XII. SEX OFFENDERS: Children and minors". California State Senate. Archived from the original on 2005-03-22. Retrieved 2006-11-23. The web page notes the Chemical Castration clause as a repeal and an addition to Section 645.
33. ^ a b "California child molesters could face chemical castration". *CNN*. 1996-08-29. Archived from the original on 2006-10-20. Retrieved 2006-11-23.
34. ^ "Codes Display Text". [leginfo.legislature.ca.gov](http://leginfo.legislature.ca.gov). Retrieved 17 June 2018.
35. ^ Macready, N. (21 September 1996). "Chemical castration for paedophiles approved". *BMJ*. 313 (7059): 707. doi:10.1136/bmj.313.7059.707a. PMID 8819434. S2CID 10395767.
36. ^ Panati, Charles (1998). *Sexy Origins and Intimate Things: The Rites and Rituals of Straights, Gays, Bi's, Drags, Trans, Virgins, and Others*. New York: Penguin. p. 483.
37. ^ Spalding, Larry Helm (1998). "Florida's 1997 Chemical Castration Law: A Return to the Dark Ages" (PDF). *Florida State University Law Review*. 25 (2): 117–139. Archived from the original (PDF) on 2010-06-13.
38. ^ Rossmeier, Vincent (June 26, 2008). "Jindal approves castration for sex offenders". *Salon*. Salon Media Group. Archived from the original on November 16, 2013. Retrieved October 20, 2013. On Wednesday, the Supreme Court ruled that it's unconstitutional to execute someone for a case of child rape "where the victim's life was not taken." [...]