

Progestin - Depot medroxyprogesterone acetate (Depo-Provera®)

Fact Sheet Compiled by: Tai Strike

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The EAZA RMG encourages all institutions using contraception to supplement any contraceptive bout with behavioural and hormone monitoring. For more information, please contact contraception@chesterzoo.org.

Commercial Name:		Depo-Provera®
Contraceptive Product:		Depot medroxyprogesterone acetate
Product Category:		Progesterone
Product Availability:		Available through human drug distributors
Restrictions and/or permit required by Importing Country:		The EAZA RMG recommends always checking with your local licensing authority.
Mechanism of action:		Anti-estrogenic activity. Interference with fertilization by thickening cervical mucus, interrupting gamete transport, disruption of implantation, inhibition of LH surge necessary for ovulation.
Product information		Medroxyprogesterone acetate is an injectable synthetic derivative of progesterone administered as an acetate salt with antiestrogenic activity. Has been used most often in reproductively seasonal species (e.g., prosimians, bears, pinnipeds), species in which anaesthesia for implant insertion is problematic (e.g., giraffes, hippos), and as an immediately available interim contraceptive (e.g., if an implant is found missing or has not been ordered).
Delivery Route and dose:		Intra-muscular injection. A form for subcutaneous injection is available in the USA. Recommended dose 2.5-5 mg/kg BW every 2-3 months (the higher dose for smaller species and the lower dose for larger ones). However, New World monkeys require as much as 20mg/kg monthly (see taxon sheets). Typically higher doses are needed to block ovulation than to achieve contraception at the other points. The EAZA RMG recommends always reading the manufacturer's data sheet.
Females		
Latency to effectiveness:		1-3 days post injection. However, if the cycle stage is not known then extra time must be allowed; therefore, separation of the sexes or alternative contraception should be used for at least 1 week.
Oestrous cycles during contraceptive treatment:		Ovulation and cycling can occur (but is unlikely and the degree of suppression is dose dependent) in adequately contracepted individuals.
Managing of initial stimulation phase:		Separate sexes for a week if stage of cycle is unknown.
Use during pregnancy:		Progestins are not recommended in pregnant animals because of the possibility of prolonged gestation, stillbirth, abortion, etc. in some species, although the effect may depend on dose. Progestagens do not appear to interfere with parturition in primates, but this is a taxon-specific phenomenon.
Use during lactation:		Progestins are generally considered safe for lactating females and nursing young. They don't interfere with milk production and have not been found to have negative effects on the growth or development of nursing infants.
Use in prepubertals or juveniles:		The use of synthetic progestagens in pre-pubertals or juveniles has not been fully assessed.
Use in seasonal breeders:		Can be used in seasonal breeders. Recommended to initiate use during anoestrus or take appropriate precautions as stated above if stage of cycle unknown. Treatment should begin at least one month before the anticipated onset of the breeding season. This does not include however, canids or other carnivores due to the potential for progestin side effects, see warnings below .

Duration	Duration of efficacy, and thus latency to conception following last injection, can be extremely variable and has been seen to vary from 4 weeks to 2 years in some individuals. In general, the recommended dose (2.5-5 mg/kg BW) is effective for at least 2 months in most species. Hippos and giraffe have been treated at lower doses and appear to need re-treatment every 6 weeks. New World primates require higher doses at more frequent intervals 1 to 3 months.
Reversibility	Designed to be fully reversible but individual variations can occur.
Effects on Behaviour	Progestins don't tend to have much effect on behaviour, however because progestagens can suppress ovulation it can be expected that courtship and mating behaviour will be affected in some way.
Effects on sexual physical characteristics	Because it binds readily to androgen receptors and is antiestrogenic, females may experience male-like qualities (increased aggression, development of male secondary sex characteristics, etc.)
Males	
Latency to effectiveness:	N/A
Use in prepubertals or juveniles:	N/A
Use in seasonal breeders:	N/A
Duration:	N/A
Reversibility	N/A
Effects on Behaviour	N/A
Effects on sexual physical characteristics	N/A
General	
Side effects	Progestins are likely to cause weight gain in all species. Possible deleterious effects on uterine and mammary tissues vary greatly by species; (see taxon sheets). In the human literature, Depo- Provera® has been linked to mood changes. Because it binds readily to androgen receptors and is anti-estrogenic, females may experience male-like qualities (increased aggression, development of male secondary sex characteristics, etc.) The EAZA RMG recommends always reading the manufacturer's data sheet
Warnings	We recommend against Depo-Provera in any pregnant female save primates because of the possible duration of efficacy extending beyond the expected time of parturition which has the potential for deadly effects in all species but primates via the failure of uterine contractions and retention of the foetus. Carnivores are highly sensitive to progestin-induced disease. Significantly increasing the risk of developing moderate to severe endometrial hyperplasia, endometrial mineralisation, pyometra, hydrometra (amongst other conditions) conditions that would cause permanent infertility in affected animals even after removal of the drug. The longer the drug use the higher the risk. May be associated in carnivores with progressive uterine growth that can result in infertility, infections, and sometimes uterine cancer; mammary tissue stimulation also can result in cancer. The EAZA RMG recommends always reading the manufacturer's data sheet
Reporting Requirements: In order to increase our knowledge of the efficacy of contraception methods it is recommended that all individuals on contraception be reported to the EAZA RMG	

References:

- 1) Wildlife contraception: issues, methods and applications, C.S. Asa, I.J. Porton (2005) The Johns Hopkins University Press
- 2) www.stlzoo.org/animals/contraception

Disclaimer: The EAZA RMG endeavours to provide correct and current information on contraception from various sources. As these are prescription only medicines it is the responsibility of the veterinarian to determine the dosage and best treatment for an individual animal under their care. The EAZA RMG can therefore not be held liable for any injury, damage or contraception failure in an animal.

