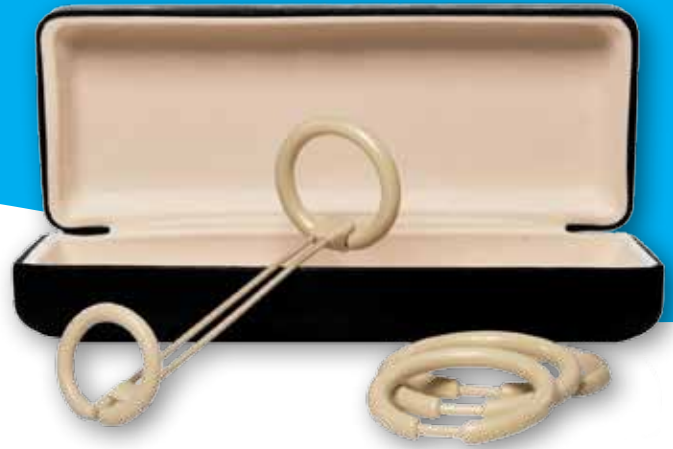


SEXUAL FUNCTION AND FERTILITY

INTRODUCTION

Sexual and reproductive functions are important parts of life for most individuals. There are many forms of sexual function and ways that people interact intimately with themselves and with others. The needs and concerns of an individual should be addressed as part of the comprehensive care plan provided to a person with SCI/D during the rehabilitation process as well as throughout the duration of their life to allow them to engage in both sexual and reproductive function as desired. For women with SCI/D, while fertility remains unchanged^{1,2,3}, SCI/D can impair genital and erogenous zone sensation as well as vaginal lubrication. For men with SCI/D, in addition to sensory impairments of the genitals and/or erogenous zones, many will experience erectile dysfunction, ejaculation dysfunction, and abnormal semen quality which leads to a decrease in fertility.^{4,5} Orgasm is variable for both men and women with SCI/D.^{6,7} In addition to the above, the strength and flexibility of an individual will play a part in positioning during sexual activity as well as the ability to engage in stimulating activity for a partner or oneself. Education on sexual and reproductive function is an essential part of a comprehensive rehabilitation care plan. This chapter will focus on types of adaptive equipment that can be used to help augment both sexual function and fertility management after SCI/D.

Appropriate selection of equipment to improve sexual function and satisfaction should be tailored to the desires and needs of the individual. A full physical exam as well as a sexual history can aid in the decision for proper equipment or interventions. It is also important to counsel individuals who have had a history of Autonomic Dysreflexia (AD) or have injury levels above T6 that the use of any stimulating or penetrating device can precipitate an episode of AD. In addition, equipment used for sexual function and fertility will need to be cleaned regularly and after every use to prevent infections. Finally, it is also worth noting that while third party payors may cover part or all of the cost of medical grade equipment, oftentimes similar products can be found online or in stores at a



reduced cost and without the need for a prescription. This chapter includes examples of both medical and non-medical grade devices currently available. Pharmacologic and surgical interventions to augment sexual function are beyond the scope of this manual and should be discussed directly with the medical team.

ERECTILE DYSFUNCTION:

This section contains descriptions of some of the devices to help achieve, maintain, or strengthen an erection in men with SCI/D. These devices can be used in conjunction with prescription medications.

Constriction Ring

Constriction rings are placed at the base of the penis and can be used to help maintain an erection by slowing the flow of blood out of the penis. Constriction rings can be combined with oral or injectable medications or with a vacuum device which can help achieve the erection followed by use of the ring to maintain the erection.

- Pro: Inexpensive, reusable, easily obtained without a prescription.
- Con: Requires hand dexterity to apply and remove. Should not be used in conjunction with anticoagulants.
- Risks/Complications: Pain or skin breakdown with prolonged use. Avoid metal rings which can get stuck or cause more damage. Rings should not be used more than 30 minutes at a time and a careful skin exam should be performed after every use.

Penile Sleeve

Penile sleeves come in various different types. They can be a full sheath covering the entire penis, a partial sheath which leaves the glans uncovered for stimulation, or have a harness which allows the penis

to be inside of the sleeve which is then strapped on to the individual. In addition to the different shapes, penis sleeves can also come with textures or vibratory features for additional stimulation.

- Pro: Easy to use. Some made with a realistic look and feel. Does not require a prescription.
- Con: May not look or feel natural. May require assistance from a partner for placement. More expensive than other prostheses.
- Risks/Complications: May cause pain or skin breakdown.

Example: <https://www.rxsleeve.com/product-category/shop-all>

Penile Support Devices

Penile support devices consist of two rings, one that is placed at the base of the penis, one at the glans of the penis with a rigid rod in between.

- Pro: Easy to use. Does not require a prescription. Lower profile than penis sleeves.
- Con: May cause pain for the partner. May require assistance from a partner for placement.
- Risks/Complications: May cause pain or skin breakdown.

Example: <https://www.theelator.com>

External Penile Prosthesis

External penile prosthesis are also called belted prosthetic phalluses or in the common vernacular “strap-on”. These devices consist of an artificial phallus which is then strapped on to an individual to allow for penetration. Different products can attach to different parts of the body including the genital region or thigh.

- Pro: Easy to use. Does not require a prescription.
- Con: May not look or feel natural. May require assistance from a partner for placement.

Examples: <https://www.lovehoney.com/sex-toys/strap-ons>

Penile Prosthesis

In addition to the strap-on versions above, some penile prosthesis are used without being strapped onto the genital region. Instead these devices can be used for self penetration or penetration of a partner using a hand, universal cuff, strap or velcro.

- Pro: Easy to use and inexpensive. Widely available. Does not require a prescription.
- Con: May not look or feel natural.

Vacuum Tumescence Device

Vacuum tumescence devices are used to achieve an erection by pulling blood into the penis. They can be used in conjunction with penis rings shown above to maintain an erection. Lubrication should always be used to prevent skin damage during use.

- Pro: FDA-tested brands have safety mechanism to limit vacuum to avoid bleeding risks. Medical grade pump (shown below) may be covered by insurance. Also available in non-medical grade without a prescription.
- Con: Requires good hand dexterity or a partner for use. Cannot be used with anticoagulants or history of Peyronie’s disease.
- Risks/Complications: Pain and bruising. Requires time to use to stimulate an erection.

Semi-rigid Penile Implant

Semi-rigid penile implants consist of two semiflexible rods which are placed surgically into the penis. The rods do not change length or stiffness but can be placed in an up or down position in order to allow for concealment under clothing or for penetration.

- Pro: Rigid enough for penetration but flexible enough for concealed position when not in use. Various lengths and widths available.
- Con: Requires surgical implantation.
- Risks/Complications: Because these are surgically implanted, there is a risk of infection as well as erosion of the prosthesis through the skin. Individuals with SCI/D are at higher risk of these complications than the general population therefore implantation should involve discussion with a surgeon on the potential complications.

Inflatable Penile Implant

Inflatable penile implants consist of three pieces – a fluid-filled reservoir which is implanted under the abdominal wall, a pump and release valve which is placed inside the scrotum, and two inflatable cylinders placed inside the penis. When not in use the penis is flaccid. Manual pumping of the pump releases the valve and causes fluid to fill the cylinders inside of the penis for an erection.

- Pro: Allows penis to be flaccid when the implant is not in use. Various lengths and widths available. Lower risk of tissue perforation than semi-rigid implant.

ERECTILE DYSFUNCTION

SILICONE CONstriction RINGS



Constriction Ring



Elator Sleeve
www.theelator.com



RX Sleeve
www.rxsleeve.com



Harness attachment for External
Penile Prosthesis



Vacuum Tumescence Device



External Penile Prosthesis



Inflatable Penile Implant

- Con: Requires surgical implantation. Device wears out and requires surgical replacement overtime.
- Risks/Complications: Because these are surgically implanted, there is a risk of infection as well as erosion of the prosthesis through the skin. Individuals with SCI/D are at higher risk of these complications than the general population therefore implantation should involve discussion with a surgeon on the potential complications. There is slightly less risk of erosion with the inflatable penile implant compared to the semi-rigid implant.

ANEJACULATION

Studies estimate that only 16% of all men with SCI and 11.8% in men with complete SCI are able to ejaculate during sexual activity.⁸ Penile vibratory stimulation (PVS) and electroejaculation (EEJ) are two non-surgical options which require DME in order to help achieve ejaculation for semen collection. PVS is considered the first line therapy due to the safety profile, reliability, cost-effectiveness, and ability to perform it at home.^{8,9} PVS is performed by applying a vibrating device to the dorsum or frenulum of the glans penis. Although any vibrating device can be trialed at home, medical grade devices such as the Ferticare Personal device shown below are able to deliver vibratory amplitudes of 2.5mm and 100Hz which has been shown to have the highest ejaculatory success rates in men with SCI T10 and above.¹⁰ If PVS is unsuccessful EEJ can be attempted. EEJ is performed in the office setting by inserting the probe or electroejaculator into the rectum and stimulating against the prostate. Although ejaculation with the use of PVS and EEJ is generally successful except in the cases of complete sacral root injuries¹¹, it is important to remember that sperm quality is also impaired after SCI and therefore semen collection may need to be used in conjunction with a comprehensive reproductive plan of care.

Vibratory Stimulation Device (Non-Medical Grade)

- Pro: Inexpensive. Does not require a prescription. Can be used at home.
- Con: Not as reliable as medical grade devices for semen retrieval.
- Risks/Complications: Autonomic dysreflexia (AD), bruising, bleeding, and skin ulceration.

Vibratory Stimulation Device (medical grade)

Examples: <https://medicalvibrator.com>

- Pro: Higher rate of success than non-medical grade vibrators. May be utilized in the medical setting or at home. Some home devices have a sensor light that indicates when too much pressure is being applied. May be covered by some third party payors.
- Con: Requires a prescription. Expensive.
- Risks/Complications: Autonomic dysreflexia (AD), bruising, bleeding, and skin ulceration.

Electroejaculation Devices

- Pro: Higher rate of success for semen collection than vibratory stimulation.
- Con: Must be used in the medical setting by trained individuals. Most expensive.
- Risks/Complications: AD, rectal injury, and retrograde ejaculation.
- Additional: Due to the potential for life threatening AD, EEJ is always performed in an office with trained medical personnel. Medications may need to be used to help control AD during use.

DECREASED GENITAL SENSATION

Below are examples of different vibrating pieces of equipment which can be used alone or with a partner to enhance sensation, genital or erogenous zone stimulation. These products come in many forms including internal, external or a combination of stimulation points. More expensive versions also come with phone applications or remote controls that can be used by someone who has limited upper extremity strength or dexterity to provide stimulation to themselves or to a partner.

Examples: <https://www.lovehoney.com/sex-toys/vibrators>

External Penile Sleeve Vibrator

- Pro: Inexpensive. Does not require a prescription.
- Con: Requires good hand dexterity to apply, operate, remove, and clean.
- Risks/Complications: AD and skin damage with prolonged use.

Anal / Prostate Vibrator

- Pro: Inexpensive. Does not require a prescription.
- Con: Requires good hand dexterity to apply, operate, remove, and clean.
- Risks/Complications: AD, hemorrhoids, rectal bleeding.

ANEJACULATION



Vibratory Stimulation Device
(Non-Medical Grade)



Vibratory Stimulation Device (Medical Grade)



Electroejaculation Devices

DECREASED GENITAL SENSATION



Combination Internal and
External Vibrator



Anal/Prostate Vibrator



Combination Internal and
External Vibrator



External (Clitoral) Stimulator



Internal ("G Spot") Vibrator

External (Clitoral) Stimulator

Different stimulators are handheld, are attached to a finger or tongue in cases of limited dexterity.

- Pro: Easily available. Does not require a prescription.
- Con: May require a partner for placement or to turn the device on and off.
- Risks/Complications: AD and skin damage with prolonged use.

Examples: <https://www.lovehoney.com/sex-toys/vibrators/clitoral-vibrators>

Internal ("G Spot") Vibrator

- Pro: Higher rate of orgasm even with complete SCI. May be used alone with limited hand function or with a partner. Inexpensive and easily available.
- Risks/Complications: AD.

Examples: <https://www.lovehoney.com/sex-toys/vibrators/g-spot-vibrators>

Combination Internal and External Vibrator

- Pro: Higher rate of orgasm even with complete SCI. May be used alone with limited hand function or with a partner. Inexpensive and easily available.
- Con: May need more hand function or partner to operate.
- Risks/Complications: AD, skin breakdown with prolonged external use.

POSITIONING DEVICES

Pelvic Supports / Pillows / Wedges

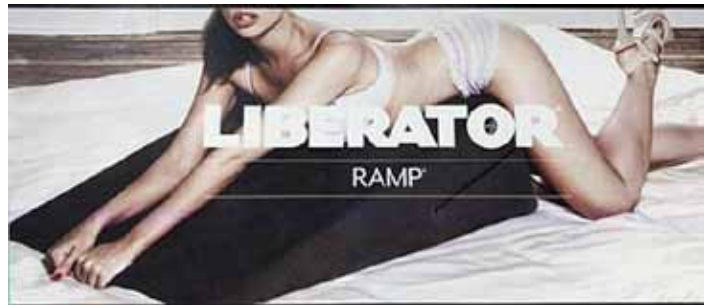
Pelvic support devices, pillows and wedges can all be used to aid in pelvic positioning during sexual activity. Some wedges can be used for positioning for other activities of daily living such as helping to position individuals for lower body dressing.

- Pro: Inexpensive. Does not require a prescription. Can be used for ADLs or sleep positioning.
- Con: Depending on the material may be hard to clean.

Examples: <https://www.intimaterider.com>
<https://www.liberator.com/wedge.html>

Examples: <https://www.intimaterider.com/ridermate/deluxe-7160>

<https://www.liberator.com/sex-furniture.html>



Chairs

- Pro: Allows for seated sexual activity. Aids in positioning. Some chairs allow for easier movement.
- Con: Requires good truncal balance and skin integrity.
- Risks/Complications: Potential for falls given movement of the chair and need for good truncal balance. May also cause pressure injuries.

Slings / Harness

There are various slings and harnesses on the market that can be used in a hanging position to provide movement with minimal effort or in a laying position to help hold legs or thighs in an open position to allow for easier access. Most products include adjustable and padded straps for versatility.



- Pro: Easy to obtain, relatively inexpensive, easy to use.
- Cons: Requires a partner for placement of the devices.
- Risks/Complications: Can cause injuries if the straps are not positioned properly or are too tight.

Examples: <https://www.amazon.com/Access-Portable-Restraint-Fetish-Bondage/dp/B00AT4GRSQ>

<https://www.LoveHoney.com/Bondage/Sex-Swings-Machines>

VAGINAL LUBRICATION

Women with SCI/D may have impairment of vaginal lubrication which can decrease sexual function or pleasure. Lubricants are available without prescription

and are inexpensive. Lubricants are mentioned in this chapter as certain lubricants such as silicone based lubricants should not be used with silicone based devices or condoms as they can stick to or erode the devices. In addition, oil based home lubricants such as baby oil should not be used vaginally as they can cause infections or cause latex condoms to fail.

Water Based Lubricants

- Pro: No prescription necessary, inexpensive. Can be used in conjunction with devices, condoms, or while attempting to become pregnant.
- Cons: May wear off more quickly or be stickier than silicone-based lubricants.
- Additional: Comes in many varieties including thin, thick, warming, cooling, and hypoallergenic.

Silicone Based Lubricants

- Pro: Smoother, less sticky, more ‘natural’ feeling, longer lasting than water-based or hybrid lubricants. No prescription necessary, inexpensive.
- Cons: Should not be used with silicone toys or condoms. May cause an allergic reaction.

Patient Resources:

Many patient facing resources including personal stories, videos, articles, research, and manuals are available for further education on sexual function and fertility including DME available as well as guides on how to use and maintain the equipment. Some resources are included here though many others also exist:

<https://www.sexualitysci.org/>

<https://scisexualhealth.ca/sexuality-201-sci/>

<https://facingdisability.com/resource/sexuality-resources-from-stanley-ducharme-ph-d>

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