

## Successful Self Penile Injection Hints, Questions and Answers

Department of Urology  
UCSF Helen Diller Family Comprehensive Cancer Center University of California, San Francisco  
550 16th Street 6th Floor Box 1695 San Francisco, California 94143  
For appointments, please telephone (415) 353-7171

Alan W. Shindel MD MAS, Stan Rosenfeld, Patient Advocate, and past contributors

### Greetings!

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This document was prepared to make the use of injection therapy as easy and painless as possible for those who have decided to use it to treat erectile dysfunction. This document should also be useful to those considering the use of injection therapy.

At the end of the document, you will find a request for feedback.

It should also be noted that it is not necessary to have an erection to have an orgasm. A vibrator and/or modification of sexual practices can be helpful and lead to satisfying sexual encounters even without an erection.

Q1. Are there any blood flow problems such as diabetes that would make injection therapy unlikely to help with erections?

A1. Injections are a very powerful treatment mechanism but do not work for every man. Men who have severe and/or longstanding diabetes are at greater risk of not seeing success with injections. The only way to find out, however, is to try them.

Q2. Are there medical conditions that preclude the use of injections?

A2. Yes. 1. Severe scarring of the penis.

2. Allergy to one of the medications used for injection (e.g. papaverine, prostaglandin, phentolamine, atropine). Men allergic to one of these may be candidates for an injection agent that does not contain the allergen.

3. Active infection or sores on the penis.

Note: Blood thinners such as aspirin, plavix, or warfarin can increase risk of bleeding/bruising. The needles used for injection are very small, so the risk is minimal so long as pressure is held on the injection site.

## After Surgery

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Q3. After a nerve sparing Prostatectomy, will injections help in recovery of my natural erections?

A3. Injections may be helpful at inducing erections. Some experts believe that inducing these erection responses can be helpful at preserving or restoring natural erections. Evidence to support this hypothesis is lacking. At this time, it is not clear that injections will help restore natural erections, but there is low risk of harm from this so long as appropriate safety procedures are utilized. (Regardless of their use in rehabilitation, erection medications can be very helpful in helping patients achieve erection for sexual activity after prostate cancer treatment.)

Q4. What is the optimal time after surgery to begin injection therapy?

A4. There is no strict time criteria to start injections. Most men should take at least 4-6 weeks to recover from the operation before resuming sexual activity, including use of penile injections.

Q5. Will injections work on men with non-nerve sparing prostatectomies?

A5. One advantage of injections is that they bypass the nerves that are necessary to induce erections under normal circumstances. For this reason, they usually work regardless of nerve sparing status. The chances for effectiveness are somewhat lower in men who have not had nerve sparing surgery.

## After Radiation

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Q6. Are there different recommendations for treating erectile dysfunction with injections for erectile dysfunction resulting from radiation therapy?

A6. No, there is no difference.

## Injection Medications And Mechanism

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Q7. It seems that there are several different medications suitable for injections. What are they and what are the differences?

A7. Each of these medications will work to help you achieve an erection. You should always consult your physician to discuss which is best for you. Some of the medicines currently in use include the following:

1. Papaverine is available at a relatively low cost and is stable at room temperature but is less effective than the other medications and may have a higher tendency to cause scarring (fibrosis).
2. Papaverine plus phentolamine (Bimix) is more potent than papaverine alone, but with the same potential side effects such as priapism (see Q19 for definition) and scar tissue formation.
3. Alprostadil rarely causes priapism, but with its use, pain is more common. (Alprostadil is also known as prostaglandin E-1 or PGE-1. In powdered form it may be called Caverject or Edex.
4. Papaverine plus phentolamine plus alprostadil (Trimix) is the most potent but requires refrigeration and has the same side effects as Papaverine and Alprostadil.

5. A fourth formulation for erections is Quadmix, which is Trimix with addition of a fourth drug called atropine, a very powerful anticholinergic drug. This drug is infrequently used as the role of atropine in erection processes is unclear.

If you are having problems with adequate erections while using injections talk to your health care provider about changing, the medication, the amount injected, and/or the strength of the medication.

Q8. How do these medications work to produce an erection?

A8. These drugs create an erection by relaxing the smooth muscles and widening the blood vessels in the penis to enhance blood flow. They are not dependent on nerve stimulation. For a more complete discussion of how the penis functions see our Your Health Matters document entitled, Managing Erectile Dysfunction - A Patient Guide. Available at: <https://urology.ucsf.edu/prostate-cancer-education-documents>.

Q9. Are there long-term side effects to the use of injections?

A9. Historically it was thought that scarring from repeat injections or the agents themselves might lead to deformity of the penis. While this is possible, the needles used are quite small and the chance of scar build up is unclear. However, it is possible that injections might cause or reveal scar tissue in the penis. This may lead to penile deformity which can be painful and interfere with intercourse. This is called "Peyronie's Disease." It is caused by a buildup of plaque or scar tissue inside the penis in the lining of the corpora cavernosa. These are the two sponge-like cylinders running the length of the penis into which the medication is injected. It is relatively rare and can be treated. You can minimize the risk of getting Peyronie's with correct injection technique.

Q10. Are there any medications I can take to further reduce the risk of getting Peyronie's Disease?

A10. The AUA guidelines state that there are no medical therapies that have been proven to reduce the risk of developing Peyronie's disease. Some experts recommend the use of drugs such as pentoxifylline, but robust evidence that these drugs work is lacking.

Q11. Can massaging the injection site reduce the chance of Peyronies?

A11. Compressing the site to stop bleeding may reduce the chance of developing scar tissue.

## **Erections From Injections**

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Q12. Do injections work for everyone?

A12. If the medication is properly dosed and properly injected, the majority of men will experience an erection response to injections. Most men require some dose adjustments before they find a dose that works. Some men may not respond to even higher doses of the medication.

Q13. Does the medication continue to work indefinitely or is a tolerance created requiring increasing dosage?

A13. Once a stable dose is established, the injections at the identified dose tend to work for years. Progression of ED is common and may require intermittent dose adjustment.

Q14. How long will the erections last?

A14. This depends on a number of factors including one's general health, current physical status, whether the proper dosage was properly injected and the presence of other stimulation. Erections generally appear in 5 to 10 minutes and on average last approximately 30 minutes. Longer durations are possible. If erections persist beyond 4 hours, they often become painful and carry some element of risk so the goal with injections should be to always use a dose that does not produce erections lasting longer than is necessary for a satisfying sexual experience.

Q15. Can injections be used with vacuum erection devices?

A15. It is not typically necessary nor advisable to use a vacuum device in conjunction with injections. The risk of bruising or bleeding is higher if a vacuum device is applied.

Q16. My medication requires refrigeration. How long can it be left un-refrigerated?

A16. The medication does not "spoil" the way food might if left out, so it does not become dangerous to use if left out of the refrigerator. The medication does gradually lose potency, a process that is accelerated if it is not kept cold, so it is advisable to put it back in the refrigerator as soon as is feasible.

Q17. May I use the medication directly from the refrigerator?

A17. Yes, so long as it is completely thawed (not frozen).

Q18. If I am traveling, are there medications that don't require refrigeration that I can use in place of my regular medication?

A18. Some medications are available in powdered form to be mixed at the time of use. Examples include alprostadil (Caverject™ or Edex™) and some formulary mixes of Trimix. Mixed compounded medications can be transported; ideally, they should be kept as cold as is feasible (in checked bags or a cooler) to help retain as much potency as possible.

Q19. What is the definition of priapism?

A19. Priapism is a prolonged erection not associated with sexual excitement. Most cases of priapism are of the “ischemic” variety, associated with pain and lack of blood flow. Priapism resulting from injections is virtually always of the ischemic type.

Priapism can be a serious complication. If ignored, it may result in severe pain and permanent erectile dysfunction not responsive to medical therapy. Fortunately, priapism can be reversed if treated promptly; it is hence very important to contact your doctor and/or go to the emergency room immediately if you develop a rigid erection lasting for more than 4 hours.

Q20. I’ve heard that ice packs, exercise, and/or use of medications like Sudafed, Benadryl, or Terbutaline can reduce a prolonged erection. When should these be used?

A20. None of these treatments have been shown as reliable methods for reversing priapism. Use of these should not delay consultation with your doctor or going to the ER if you think you might have priapism.

## **Injection Mechanics**

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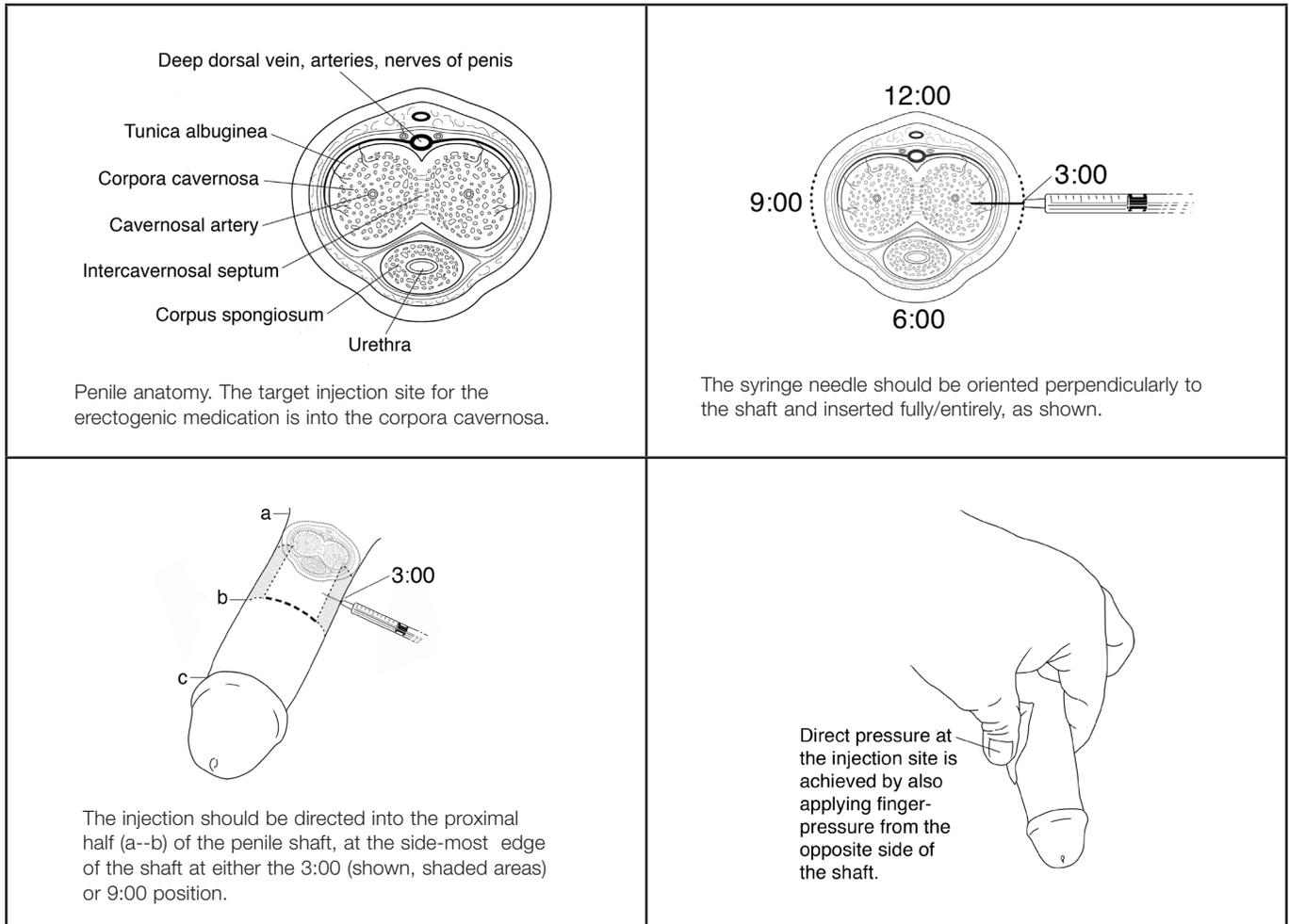
Q21. How can I make it easier to withdraw the medication from the upside-down glass vial?

A21. Before filling the syringe, pull back on the plunger to fill the syringe with air in a volume roughly equivalent to the amount of fluid you are planning to inject. After the syringe is filled with air, push the needle through the rubber stopper on the vial of medication. Once the needle is pushed through the rubber stopper, the plunger should be pressed to push the air into the vial before withdrawing the medication from the upside-down vial.

Q22. Where in the penis do I want the medication to go? What structures am I aiming for and which do I want to avoid?

A22. Alternate between injecting at the 3 and 9 o’clock positions. You will be injecting into the corpus cavernosum (erectile bodies). When choosing an injection site, avoid any area where a blood vessel is clearly visible. Midshaft is most convenient for most men but do not inject the very same spot every time to avoid scarring.

## Correct Place to Inject



Art by Jeanne Koelling with input from Maurice Garcia, MD, MAS; Tom F. Lue, MD, ScD (Hon), FACS and advocate Stan Rosenfeld

Q23. Besides the 3 and 9 o'clock positions, I have also been told that I can inject at 2, 4, 8 and 10 o'clock positions. Does it matter?

A23. 2, 4, 8, and 10 are all OK, but may increase the risk of the needle not going into the erectile bodies, leading to a failed injection.

Q24. What needle length should I use?

A24. A 1/2-inch or 5/16-inch long needle is an appropriate for injections in men with a penis of any size/shape.

Q25. Does injection hurt?

A25. As there are few nerve endings on the penile shaft most men have minimal or no discomfort. Some men might feel some mild discomfort, but this is typically over quickly. Some men who inject prostaglandin containing medications may have some aching sensation from the medication itself.

Q26. How can I be sure I am injecting in the right place?

A26. The key is to ensure that the needle is placed inside the corpora cavernosa (see figure above). Typically, this is best accomplished by inserting the needle perpendicular to the shaft of the penis; there is often a small amount of resistance to the needle as it penetrates the skin and again when it penetrates the tunica albuginea (the tough sheath that covers up the erectile tissue). It should not be difficult to push down on the plunger if the needle is properly placed. If you meet resistance the tip of the needle may be in a tough fascial layer; in this case back up the needle slightly and try again.

Q27. If I don't get any response to an injection, is it advisable to follow up with another injection maybe to a different side of the penis and perhaps using a smaller dose?

A27. It is risky to do a repeat injection. In some cases, the medication takes a bit longer to take effect and repeat dosing may increase the risk of priapism. It is safer to simply accept that the injection did not work that time and try again at least 24 hours later.

Q28. I'm bothered by the pain of the injection, are there topical anesthetics that I can use?

A28. Yes, any local anesthetic such as xylocaine jelly or cream will help. EMLA, a combination of 2.5% lidocaine and 2.5% prilocaine, is available with a prescription. ELA-Max, 4% or 5% lidocaine is available over the counter, without a prescription.

Q29. Are there thinner needles available that could be used to reduce discomfort?

A29. This is not recommended. Smaller needles are prone to breakage. The typical width of the needle is 28-30 gauge.

Q30. What's an Auto injector and how might it help me?

A30. An Auto-injector is a spring-loaded device, which inserts the needle into the penis very quickly, minimizing psychological "hesitancy." It comes in two forms, a simple non-prescription device designed to insert the needle for you and a prescription-required device that also depresses the plunger for you. You can check with your local drug store to obtain the simple auto-injector (no prescription required).

Use of the Auto injector is useful for men who have a mental block to inserting a needle into their penis and/or have concerns about not injecting into the right spot. It is variable on whether or not it is helpful in terms of pain; some men have reported that the spring-loaded needle device is more painful than simply doing a self-injection.



Auto-Injection Technique. The syringe is filled as usual, and the syringe is loaded in the Auto injector. The side of the penis is cleaned with an alcohol swab and the injector placed against the penis. Pressing a button then activates the injector and the needle is automatically inserted.

Q31. Can I use 'needle-less' injection systems, similar to those being used by people with diabetes?

A31. No, they only place medications into the skin. The medication needs to go into the deeper tissue (corpora cavernosa).

Q32. At what angle should the needle enter the penis?

A32. As long as the injection is at 90 degrees (perpendicular to the shaft of the penis) the risk of urethral injury is low. A shallow injection should not be used because the medication may not get into the corpora cavernosa and may not be effective.

Q33. Sometimes I see a tiny amount of blood from the injection site just when the needle is withdrawn and sometimes I do not. Why?

A33. Slight bleeding may relate to injury to a small blood vessel. It is not of any consequence and can be managed with compression.

Q34. What's the best way to hold the penis for the injections?

A34. Everyone has their own approach. Our general recommendation is that it is easier to inject into the right spot if the head (glans) of the penis is grasped and pulled to full extension away from the body. This technique thins out the skin and make the corpora cavernosa easier to target.

Q35. Is it important to apply pressure to the injection site for a full 5 minutes after injections?

A35. Five minutes is ideal. In most cases less time will be effective, but men who have tendency to bleed or are on blood thinners should try to hold the puncture site for 5 minutes.

Q36. Should I vary the injection site? What is the best way to do that?

A36. The places for injection are limited by the anatomy of the penis and you must adhere to these. Alternating injection sites from left to right is recommended when possible.

Q37. Is it important to get all the bubbles out of the syringe before injection?

A37. Tiny bubbles are not clinically significant; do your best to eliminate bubbles by flicking the syringe but do not worry about clearing every last bubble.

## **Dosage And Other Considerations**

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Q38. How is the correct dosage determined? How do I know when I have the right dose?

A38. Dose consists of both the strength of the medication and the amount used. With the appropriate strength and amount of drug as determined by a physician (usually less than 1cc), erections usually occur in 5 to 10 minutes, and last for approximately 30 minutes to an hour. The erection becomes more rigid if sexual stimulation occurs. It may take some time and "trial and error" to determine the optimal medication and dose for each individual man.

Q39. Is sexual stimulation required for an erection? Can I use less medication if I have more stimulation?

A39. Stimulation is not required after penile injections but may enhance erection responses. You may be able to use less medication if you combine it with stimulation.

Q40. Sometimes a dose that has worked fine before produces no erection. What happened?

A40. The most likely explanation is that the injection was placed into the wrong spot on the penis (i.e. outside the corpora cavernosa) or the medication had expired (lost its effectiveness). It is also possible that your ED has worsened, and a higher dose/different formulation may be required for continued effectiveness.

Q41. I was told not to inject more than twice a week. What's the reason for not injecting every day, for example?

A41. Hypothetically, frequent injections may increase the risk of scar tissue build-up. The actual risk of scar tissue builds per injection and is not entirely understood so some experts do recommend avoiding "overly frequent" dosing. What this means is subject to interpretation.

Q42. Does the medication lose potency over time even if stored correctly?

A42. Yes, after several months the medication becomes less effective. Compounding pharmacies are required to include expiration dates for their products. The medication does not become dangerous to use post expiration but may be less effective than when it was "fresh."

Q43. Will I develop a tolerance over time requiring an increasing dose?

A43. It is not uncommon for patients to require some amount of dose adjustment, particularly for men who are on injections for long periods of time. Compression of the injection site, rotating the injection placement, and spacing out injections may help to reduce the need for dose adjustment over time.

## **PROBLEMS**

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Q44. May I reinject if after 15 minutes if the first injection did not work?

A44. No, re-dosing may produce priapism and is not recommended.

Q45. Can lasting damage be done to the penis by penile injection?

A45. Yes, although it is rare, scarring can occur. Careful attention to injection technique and following your provider's advice is important to reduce the risk of penile damage.

Q46. What should I do if I see bleeding from the tip of the penis after an injection?

A46. Bleeding from the opening at the tip of your penis (the meatus) likely indicates puncture of the urethra. In most cases this will stop if you apply pressure by compressing the entire penis for 5-7 minutes.

Q47. What happens if I accidentally hit a large blood vessel?

A47. Compression is usually sufficient to stop any bleeding related to needle injury from penile injections. If compressing for 10-15 minutes does not stop the bleeding, you should call your health care provider.

Q48. Do infections ever develop from injections?

A48. This is a very rare phenomenon.

Q49. Does the injection site make me more susceptible for contracting a sexually transmitted infection (STI)?

A49. The needle puncture does not increase the risk of contracting or transmitting an STI. If you are concerned you or your partner may have an STI you should get tested and use a condom for your mutual protection.

Q50. Can injections be used while taking oral medications for erections?

A50. The risk of priapism increases when combining injections and oral medications. Some men may benefit from this approach, but it should not be considered first line and you should speak to your health care provider before trying it.

Q51. After using injections for a while my erections have developed a curvature. What's happening?

A51. The injections may have caused some scar tissue to have formed. Curvature occurs in 10% or fewer of men in the general population and may be more common in men using injections. This condition is called Peyronie's disease. Talk to your doctor about causes and treatment.

Q52. It is difficult for me to inject on both sides of my penis. Is it essential to alternate injection sites?

A52. It is better if you can inject both sides. If you cannot do this it is okay to do just one side although this hypothetically does increase risk of scarring on one side of the penis.

Q53. Can just one injection cause Peyronie's disease?

A53. It is possible but not likely. In this case what is more likely is that injection reveals scar tissue that was leading to a pre-existing curvature of the penis that was not previously apparent because the man was not getting regular erections.

Q54. Can men that develop curvature continue to safely use injections?

A54. Yes, so long as the curvature is minimal and not disruptive of sexual experience.

Q55. Are there treatments for problematic curvature of the penis?

A55. The only FDA approved medication for Peyronie's Disease with curvature is an injection that can dissolve the scar tissue and help straighten the penis. It is called Xiaflex™ (collagenase). Surgical correction of curvature is also possible for stable curves that have been present for more than 6 months or so. Some oral medications have been used for treatment of Peyronie's Disease but none of these have strong evidence for efficacy and none are FDA approved.

## **Miscellaneous**

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Q56. Can injections be used in patients with a penile implant?

A56. No. Injection will lead to worsening rupture of the device and increases risk of infection.

Q57. If I want the erection to last longer and I don't want to use more medication, may I use a penile constriction ring?

A57. Yes, but the ring should not be left on for more than 60 minutes at a time.

Q58. Is injection therapy useful for men with premature ejaculation?

A58. The AUA Guidelines on premature ejaculation recommend against use of injection agents for management of premature ejaculation. Injections may be useful for men who have both premature ejaculation and Erectile Dysfunction.

## **In The Future**

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Q59. What kinds of medications or procedures are on the horizon to help men with erectile dysfunction?

A59. A variety of novel formulations for various drugs are under investigation. Low-intensity shock waves are a promising technology that may have utility in the future. As of May 2021, this treatment is still not a standard of care and should not be used outside of a clinical trial setting at no or minimal cost to patients. Other technologies such as stem cell therapy, gene therapy, acoustic wave therapy, and/or platelet rich plasma are similarly lacking in evidence basis and should not be considered outside of a clinical trial setting. The utility of any of these future treatments for ED in men who have been treated for prostate cancer is unclear since most publications to date have excluded men who have had prostate cancer treatment.

## **Questions?**

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If you would like to talk about the Successful Self Penile Injection booklet with a member of the group that prepared it, please contact Stan Rosenfeld, UCSF volunteer and prostate cancer advocate. Stan can be reached by telephone at (415) 459-4668 or by email at [vegstan3@gmail.com](mailto:vegstan3@gmail.com).

## QUESTIONNAIRE

Please take a few minutes to answer the following questions. Your answers will help improve future editions of this guide.

Please check the appropriate box:

STATEMENT	STRONGLY AGREE	AGREE	NEITHER AGREE NOR DISAGREE	DISAGREE	STRONGLY DISAGREE
Overall, the guide was helpful					
The information was presented clearly and in a way that was easy to understand					

STATEMENT	TOO MUCH	JUST RIGHT	TOO LITTLE
The amount of information presented was:			

1. What was most helpful about the Guidelines? \_\_\_\_\_  
 \_\_\_\_\_

2. What was least useful about the Guidelines? Why? \_\_\_\_\_  
 \_\_\_\_\_

3. Should anything have been made more understandable? \_\_\_\_\_  
 \_\_\_\_\_

4. Should anything be added, or discussed in more detail? \_\_\_\_\_  
 \_\_\_\_\_

5. Was anything in conflict with what you already know about erectile dysfunction? \_\_\_\_\_  
 \_\_\_\_\_

We welcome your comments on this document. You can e-mail them to [urologyresearch@UCSF.edu](mailto:urologyresearch@UCSF.edu) or mail them to Your Health Matters Box 1695, UCSF Department of Urology, San Francisco, CA 94143-1695