The repertoire of human efforts to avoid sexually transmissible diseases: past and present.
Part 2: Strategies used during or after sex

Basil Donovan

Background/objective: Despite the focus by public health programmes on condoms, chastity, or monogamy, people use a much wider variety of strategies to minimise their personal risk of sexually transmissible disease (STD). The objective of this study was to compile a comprehensive list of personal and societal STD avoidance strategies.

Methods: Data from clinical and research observations, computer searches, and historical texts were pooled.

Results: A variety of behaviours during or after sex, other than condoms, were identified that have been perceived to alter STD risk. STD avoidance strategies were often poorly documented and difficult to disentangle from other drives such as aesthetics, sexual variety, and contraception. They also varied in popularity in time and place. Some examples were douching; systemic and topical prophylactic antimicrobials; non-penetrative sexual practices, post-coital urination; and examining sexual partners' genitalia. Interest in some practices has been recently revived—for example, vaginal microbicides and post-exposure chemoprophylaxis, while others—for example, withdrawal and non-penetrative sexual practices, receive scant attention but may be much more widely used.

Conclusion: The full spectrum of STD avoidance strategies warrants further study because some are ubiquitous across cultures and because they have the potential to complement or undermine safer sex programmes. Because of their greater acceptability, some less efficacious strategies may have greater public health importance than less popular but more efficacious strategies such as condoms.

(Sex Transm Inf 2000;76:88–93)

Keywords: sexually transmitted diseases; HIV; prostitution; military

Introduction
The accompanying article1 outlined the range of strategies that people use, or have used, to reduce their risk of sexually transmissible disease (STD) before (or instead of) engaging in sex. In that article societal responses to STDs and factors influencing sexual partner selection were also discussed.

In this article, the STD avoidance strategies that people initiate at the time they have sex or shortly thereafter are listed. Military and sex industry responses to STDs are also outlined. The methods used to derive this information were described previously.1

Strategies adopted during sex
The male condom received pre-eminence in HIV/AIDS safer sex campaigns23 because it was the most established product, it was biologically plausible, and because it was deemed to be the most acceptable option for the highest risk populations such as homosexually active men and sex workers and their clients. In retrospect, this took considerable courage as it has taken a long time to establish the substantial protective efficacy against HIV transmission of condoms.4 The protection provided by condoms against other STDs is more variable.5

Globally, however, consistent male condom use remains a minority strategy because of moral objections, limited consumer acceptability, or logistic reasons. The costs of condom use—including financial, interpersonal, aesthetic, and social costs6—are too high for most people. Instead, many people in different settings adapt their sexual practices in ways that do not include male condoms (table 1), often with unknown or only marginal benefit for STD prevention.

Vaginal microbicides are currently the subject of renewed interest because they minimise the need for male cooperation in HIV prophylaxis.7 A wide range of new compounds and delivery systems is being investigated, with a likelihood that a combination product will emerge with maximum antimicrobial effect and minimum side effects.8

Strategies adopted after sex
Post-coital genital washing, urinating, and applying topical antiseptics (table 2) are all strategies that were more common before better quality condoms and modern antibiotics became available, though they were of dubious value for reasons of poor compliance.9 By the 1970s, before high risk people were willing to accept condoms on any scale, systemic antibiotic prophylaxis was thought to provide the most promise for STD prevention despite its inherent problems.10 Globally, doctor initiated post-exposure prophylaxis against STDs remains uncommon. It is much more common for people to self medicate as prophylaxis against STDs.
Post-exposure systemic prophylaxis against HIV infection (and its potential to undermine safer sex campaigns) has rekindled the concept.\textsuperscript{19} If affordable, few clinicians would deny access to antiretrovirals for people who had been raped and perhaps people who had experienced a condom failure in an HIV discordant relationship. The debate centres on who else should be provided with antiviral drugs and the need for research assessing their efficacy.

**Military responses**

Driven by the imperative to maintain the health of fighting forces that were dislocated from

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Actions that individuals may take at the time of sex to alter the risk of STDs</th>
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<tbody>
<tr>
<td><strong>Action</strong></td>
<td><strong>Comment</strong></td>
</tr>
<tr>
<td>Inspect prospective sexual partners’ genitals</td>
<td>Commercial sex workers may routinely inspect their clients for discharges and lesions, and sometimes vice versa.\textsuperscript{18} This may even include undergoing antiretroviral screening (clinical observation) androgenal palpation.\textsuperscript{14} Male clients of sex workers may urinate just before inspection to deliberately conceal a urethral discharge.\textsuperscript{19}</td>
</tr>
<tr>
<td>Avoid sex during menses</td>
<td>Avoiding menstrual blood is a plausible risk reduction strategy for HIV, but there are few data to support it.\textsuperscript{43} Contact with menses has long caused STD fear in men\textsuperscript{65} (clinical observation).</td>
</tr>
<tr>
<td>Wash partners’ genitals just before coitus</td>
<td>Where water is available, commercial sex workers like to wash clients: perhaps for aesthetic reasons but antiseptics are sometimes used\textsuperscript{26} (clinical observation).</td>
</tr>
<tr>
<td>Apply antiseptics to the external genitals just before coitus</td>
<td>Some very dubious products are on the market ( fig ) which could provide dangerous reassurance. Prudently, more plausible preparations such as calomel (“Metchino’s”) ointment were applied to the penis before sex\textsuperscript{36} but were abandoned because they caused vaginal irritation or because of moral controversy. Concoctions such as borated vaseline (table 3) were thought to provide a threefold benefit: lubrication minimising trauma, antisepsis, and a physical barrier to the venerial “poison”. Fortunately, condoms were probably thick enough in those days to survive the ravages of vaseline. Antiseptics after coitus (table 2) is possibly more common.</td>
</tr>
<tr>
<td>Bandage or otherwise isolate active herpes lesions</td>
<td>This is most practical for extragenital lesions.\textsuperscript{57} Long seen as wanton, various oral sex scenarios include being the insertive or receptive partner in fellatio, cunnilingus, or anal rimming. Oral sex is probably relatively safe for HIV but exposure to semen, blood, or open lesions should be avoided.\textsuperscript{43} Oral sex is particularly risky for gonorrhoea and hepatitis A. Condoms or dental dams are often used by commercial sex workers for oral sex. While much discussed, dental dams are rarely used in non-commercial sex (clinical observation).</td>
</tr>
<tr>
<td>Practise oral sex</td>
<td>Esoteric practices include mutual masturbation (perhaps involving vibrators and dildos), “bondage and discipline,” fetishes, voyeurism, frottage (genital-body rubbing), intracural or intravelave sex, fisting, enema,\textsuperscript{43} and phone sex. The options seem unlimited.\textsuperscript{42} These practices are generally safe, but exposure of blood or anogenital secretions to open lesions should be avoided.\textsuperscript{42} Gloves are used for fisting and condoms can be used for masturbation or on a shared dildo. Sterilising a blood contaminated leather whip is a challenge.</td>
</tr>
<tr>
<td>Practise withdrawal (coitus interruptus)</td>
<td>Withdrawal is a spectrum of behaviours ranging from penile-vaginal or penile-anal approximation without little penetration, through brief pens in sex to those that retain semen. Unprotected withdrawal may be followed by the use of condoms for coitus after ejaculation only\textsuperscript{14} or combined with condoms used throughout intercourse.\textsuperscript{66} Withdrawal is most commonly used as a contraceptive method\textsuperscript{14} but also used against STDS\textsuperscript{43} and against HIV with variable success.\textsuperscript{43} Withdrawal is popular because it requires no premeditation,\textsuperscript{14} and is to the lady person and freely available.\textsuperscript{43}</td>
</tr>
<tr>
<td>Avoid saliva as a sexual lubricant</td>
<td>Saliva as a lubricant is avoided by Zimbabwean women because its association with spitting positions it as “venom”.\textsuperscript{53} This attitude persists in some men (clinical observation).</td>
</tr>
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<td>Avoid sex during menses</td>
<td>Avoiding menstrual blood is a plausible risk reduction strategy for HIV, but there are few data to support it.\textsuperscript{43} Contact with menses has long caused STD fear in men\textsuperscript{65} (clinical observation).</td>
</tr>
<tr>
<td>Avoid certain sexual positions</td>
<td>Myths abounding, including anecdotes that allowing a woman to “get on top” promotes STD transmission through gravity (clinical observation).</td>
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</table>
| Avoid anal intercourse | The repertoire of human e...
Table 2 Actions that individuals use after sex to alter the risk of STDs

<table>
<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td>Vaginally douche</td>
<td>Douching is a second rate contraceptive method that is also used for aesthetic and STD preventive reasons, with or without additional chemicals. A very common practice, douching possibly increases the risk of pelvic infections and ectopic pregnancy. It is often ambiguous as to what constitutes “douching”—ie, washing out a device that provides hydrostatic pressure or simply diligent washing of the lower vagina with the fingers (clinical observation). In the Philippines, some private doctors provide a douching service.</td>
</tr>
<tr>
<td>Wash the external genitalia</td>
<td>Washing is frequently performed by sex workers on themselves and their clients (clinical observation). One study suggested a protective effect against HIV infection for sex workers if soap and water was used but not water alone. Washing the genitalia with soap and water was a component of post-exposure prophylaxis regimens used by the military (table 3). Showering is a more subtle alternative.</td>
</tr>
<tr>
<td>Pass urine</td>
<td>Urinating immediately after sex is sometimes recommended to women to avert recurrent urinary tract infections and to (particularly military) men to avert urethral infections, but it was never proved to be of benefit for the latter. It is still common practice for some groups of men (clinical observation).</td>
</tr>
<tr>
<td>Apply topical and intravaginal antimicrobials</td>
<td>Prophylaxis was provided; in the form of portable “blue light kits” or “pro-kits,” or calomel and carbolic acid ointments at “prophylaxis stations”; to military men and in ports well into this century. Post-coital antisepsis is often practised by sex workers but without any evidence of benefit. Products used include mustard oil, lemon and alcohol, toothpaste, soap, disinfectants, deodorants, and mouthwash. Some commercial sex worker organisations recommend the use of spermicide only in the event of condom failure.</td>
</tr>
<tr>
<td>Irrigate the male urethra</td>
<td>Chemical irrigation of the male urethra was a second rate practice in the 19th century. Often used in combination with topical antiseptics such as calomel, its value was never formally proved.</td>
</tr>
<tr>
<td>Drink huge quantities of beer</td>
<td>A folk variant of the former strategy.</td>
</tr>
<tr>
<td>Take post-exposure systemic antimicrobials</td>
<td>Post-exposure antibiotics are a frequently used informal strategy, and more formally applied after sexual assault. Antibiotics were of proved benefit for gonorrhea but discouraged for routine use because of the potential for the development of antibiotic resistance and the lack of a single agent to cover all important STD pathogens. This issue recently increased in profile because of the potential for direct chemoprophylaxis against HIV.</td>
</tr>
<tr>
<td>Get vaccinated against hepatitis</td>
<td>Hepatitis B vaccination (active and/or passive) is sometimes provided after sexual assault and some other high risk sexual exposures. Hepatitis A vaccination is appropriate after confirmed sexual exposure.</td>
</tr>
<tr>
<td>Get tested for STDs</td>
<td>Getting tested is a form of tertiary prevention intended to avert complications of STD if already infected and also to protect future sexual partners. This strategy is limited by test “window periods,” test insensitivity, and lack of protection against new infections but it enjoys widespread approval.</td>
</tr>
<tr>
<td>Notify past sexual partner(s) if infected with an STD</td>
<td>For curable STDs, contact tracing reduces the likelihood of reinfection for the index case.</td>
</tr>
</tbody>
</table>

Commercial sex industry responses

Long perceived by the public and authorities as central to STD epidemiology, the sex industry has often responded remarkably to the fear of HIV infection by increasingly using condoms. Anecdotally, the demand for conventional (vaginal) commercial sexual services diminished, if only transiently, in many parts of the world with the emergence of AIDS. In response, and facilitated in some cases by technological developments, safer forms of commercial sex have blossomed (table 4). Too little is known about them to determine how much these practices are intended to avoid infection or to cater to an increasing market for sexual variety.

Discussion

Many potential STD avoidance strategies have been listed here and previously, though insufficient data are available to determine their...
The repertoire of human efforts to avoid sexually transmissible diseases is wide ranging. The use of male condoms, for example, offers the highest efficacy among the means available, and their widespread availability is a major reason why they have been so successful in reducing the spread of sexually transmissible diseases (STDs) in many parts of the world. Nevertheless, the use of condoms is not without problems, and their effectiveness depends on a number of factors, including the quality of the condoms, the compliance of the users, and the particular sexual practices involved.

Table 3: Instructions* posted by Austrian military authorities in brothels in occupied territories during the first world war

<table>
<thead>
<tr>
<th>Instruction</th>
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<tbody>
<tr>
<td>1. Every girl is required to reject a diseased guest.</td>
</tr>
<tr>
<td>2. Drunken and very boisterous guests are not to be taken up to the room by the girl.</td>
</tr>
<tr>
<td>3. The girl should demand of the guest that he use a preservative instrument and if he refuses she is obliged to lubricate her organ with borated vaseline.</td>
</tr>
<tr>
<td>4. Preservatives are available at the price of ______.</td>
</tr>
<tr>
<td>5. After intercourse every girl is required to show her guest to the disinfectant room.</td>
</tr>
<tr>
<td>6. Whoever practises coitus despite the fact that he knows or can assume that he is venereally diseased is guilty of a criminal act punishable by imprisonment.</td>
</tr>
<tr>
<td>7. The best protection against infection is the use of a condom which is to be drawn carefully over the member and then sufficiently lubricated with borated vaseline. Such grease capsules are in the possession of the girls.</td>
</tr>
<tr>
<td>8. After coitus, the member should immediately be washed thoroughly with warm water and soap after which the guest should go to the disinfectant room, the entrance to which is always marked by a red lamp. The attention of the soldier is called to the fact that it is his bounden duty to report to that room and that a neglect of this provision is punishable.</td>
</tr>
<tr>
<td>9. Moreover, prophylaxis is advised for the other visitors to the brothels.</td>
</tr>
</tbody>
</table>

*In three languages—German, Hungarian, and Croatian. Source: Hirschfeld.†

Table 4: Forms of commercial sex that have thrived since the advent of AIDS

<table>
<thead>
<tr>
<th>Form of Commercial Sex</th>
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<tbody>
<tr>
<td>1. Consistently protected vaginal or anal intercourse.</td>
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<tr>
<td>2. Pornography, especially videos and electronic forms.</td>
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<tr>
<td>3. Telephone sex.</td>
</tr>
<tr>
<td>4. Bondage and discipline, and other fetish services.</td>
</tr>
<tr>
<td>5. Massage with “hand relief” (client masturbated by sex worker).</td>
</tr>
<tr>
<td>6. BJ (“blow job” or fellatio) services.</td>
</tr>
<tr>
<td>7. Lap dancing (intimate stripping without genital contact).</td>
</tr>
<tr>
<td>8. Sexually explicit computer bulletin boards.</td>
</tr>
</tbody>
</table>

*Under development.

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et al.


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74 Hooker E. Male homosexual life styles and venereal disease. JAMA 1988;i:1111.


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