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# The repertoire of human efforts to avoid sexually transmissible diseases: past and present
# Part 1: Strategies used before or instead of sex

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**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:** In addition to discriminating between potential sexual partners, a variety of behaviours before or instead of sex were identified that have been perceived to alter STD risk. Traditional STD avoidance strategies were often poorly documented and difficult to disentangle from other drives such as the maintenance of social order, paternity guarantee, and eugenics. They also varied in popularity in time and place. Some examples were displacement activities such as masturbation or exercise, circumcision, infibulation, shaving, vaccination, or requiring partners to be tested for infection. Social and moral forces typically discourage non-marital sex, and this affects most people most of the time but few people all of the time.
**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.
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Keywords: sexually transmitted diseases; HIV infection; partner selection

## Introduction

The AIDS pandemic spawned an era of public messages advocating celibacy or long term mutual monogamy or, if a person must have non-marital sex, the use of male condoms. The tyranny of having to keep the message simple or socially acceptable meant the bulk of the repertoire of strategies traditionally used by humans to minimise their risk of sexually transmissible diseases (STDs) was ignored, at least in mainstream messages. Many of these alternative strategies have only been patchily documented if they have been documented at all. Some are ancient and so embedded in our cultures that they cannot be disentangled from other motivations such as the maintenance of social order, paternity guarantee, eugenics,[1–3] and contraception. Often, STD avoidance seems to be a minor "spin off" rather than the primary objective of these strategies.

It is important to explore alternative sexual safety strategies in their many guises. Some could be exploited to complement existing public health programmes. Others need to be addressed because they may undermine those programmes. Most would require considerably more research before they could be confidently endorsed or condemned.

This article and the article in the next issue of the journal[4] are the product of years of unfettered reading, research, and field observations, and remarks by patients and colleagues. Computer searches of the medical and social science literature using key words such as "prophylaxis," "withdrawal," "coitus interruptus," "avoidance," and "prevention" near "sexually transmitted diseases" yielded thousands of papers but few surprises. Reading or rereading books about sexuality or STDs that have substantial social or historical elements proved more rewarding. Even so, virtually all of the phenomena recorded in these two articles have been observed in my own varied clinical practice in sexual health medicine and primary care over the past 20 years. Undoubtedly, readers of the journal can contribute other strategies that they have detected or add insight to those that are listed. I hope they do—the aim is to broaden people's perspectives.

Arbitrarily, the strategies people use to avoid STDs have been divided into those initiated before or instead of sex (this article), and those strategies used during or after sex (the forthcoming article[4]).

## Strategies used before or instead of sex

Protective strategies that are decided upon well before sex have the advantage that they can be considered away from the "heat" of sexual opportunity. They may also reduce the need for negotiating with a prospective sexual partner, which is not always practical.[5 6] Individuals may make such decisions by themselves or with the guidance of health professionals, family, peers, or educational materials.[7 8] Or they may

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*Table 1 Actions that individuals may take before, or instead of, sex to alter the risk of STDs*

| *Action* | *Comment* |
|---|---|
| Commit to celibacy or monogamy | Dictated by most cultures and practised by most people most of the time,[14] monogamy is primarily intended to maintain social order and guarantee paternity, but is has long been acknowledged as STD prophylaxis.[42] |
| Be polygamous | Polygamy has been associated with men having fewer extramarital partners.[43] |
| Reduce partner numbers | Non-monogamous people can reduce their numbers of partners, netting both personal and public health benefits.[44 45] Reducing partner numbers was a feature of early AIDS education programmes in industrialised countries that was largely displaced by a focus on sexual practices ("safer sex") because of the high prevalence of HIV in certain subcultures meant that a reduction in partner numbers was unlikely to avoid exposure. Nevertheless, it remains a useful strategy for people who have fewer sexual partners. |
| Masturbate (alone) | Masturbation supports the above strategies and is probably practised by most people in most cultures. Masturbation is taboo or not legitimised by most cultures, even by education programmes targeted at homosexual men.[46] It has been excluded from sexual behaviour studies because of fear of offending respondents.[46] Masturbatory practices may focus on the penis, the clitoris, the anus,[47] or other parts. |
| Fantasise | With or without masturbation, people fantasise as a substitute for sex (as well as to enhance it). Tools to enhance fantasy include novels, pornography, and cybersex.[48] |
| Avoid intoxication | "John Barleycorn and the Woman of Babylon are partners": Addressing the association between alcohol and non-marital sex has been integral to temperance and VD control programmes for many years.[27 33] At times, the definition of "intoxication" even included rhythmic music and informal dancing.[49] Alcohol and unsafe sex occurred together for homosexual men and for women but not for heterosexual men in a San Francisco study.[50] Alcohol and HIV have been linked[51] along with other drugs, particularly inhaled nitrites.[52 53] Whether or not the relation between alcohol or other drugs and unsafe sex is a causal one remains unclear. Some individuals may deliberately get intoxicated in anticipation of unsafe sex.[52] Sometimes people use intoxication as an alternative to sex (clinical observation). |
| Avoid sexual temptation or opportunity | Many individuals actively avoid prostitution or other social venues that may lead to temptation.[54] Travel may also increase sexual opportunity or intent.[55] |
| Exercise, a lot | Exercise is used as both a military[27] and an individual[56] (and clinical observation) strategy to displace sexual urges. |
| Chose an appropriate contraceptive method | Different contraceptive options affect the biological risk of various STDs.[57 58] Women who already use another contraceptive method may be less likely to use condoms during sex.[59] Some women who already have adequate contraceptive cover will still insist their partners use condoms ("double contraception") to avoid STDs (clinical observation). |
| Use vaginal tighteners or drying agents | Vaginal agents are used in some cultures to enhance sexual pleasure, but also to treat vaginal symptoms and to simulate sexual inexperience.[60 61–65] The relation between traditional vaginal products and the risk of HIV infection is unclear,[63 64] but they are a cause of concern because some products induce inflammation and ulceration.[60 65] They may also cause condoms to rupture.[60] Some Zimbabwean women report that oral vaginal tightening agents are less likely to rupture condoms than vaginal agents.[60] |
| Shave the perigenital area | Shaving is mainly done for aesthetic or erotic reasons, but a reduced susceptibility to pubic lice is a positive spin off (clinical observation). |
| Acquire condoms and water based lubricants in advance | Condoms and water based lubricants need to be available if they are to be used. |
| Practise with condoms | Inexperience with male condoms is a predictor of condom failure.[66] As an (unproved) solution, pamphlets and counselling protocols advise people to "practise alone with condoms": probably meaning to masturbate with them.[8] |
| Circumcise males | Though long advocated by medical experts,[67 68] circumcision of boys is a culturally and religiously based practice with little evidence that STD prevention was a traditional motive. Individual men occasionally seek circumcision for reasons that include protection against HIV (clinical observation). |
| Infibulate males | Advocated by medical authorities into the 20th century, suturing or otherwise tethering the foreskin over the glans was intended to prevent masturbation and to preclude sexual intercourse.[69] It is also an esoteric sexual practice.[70] |
| Starve boys of affection | Starving boys of affection has been believed by some in authority to moderate their sexuality in manhood.[36] |
| Circumcise or infibulate girls | Maintenance of social order and paternity guarantee are the apparent motives behind these practices but they are associated with lower HIV rates at a societal level. Termed "female genital mutilation," these practices are widely regarded as barbaric and have been made illegal in many jurisdictions.[71] |
| Use a chastity belt | A variety of devices have been used on females and males to preclude sexual intercourse or masturbation. They seem to have been relegated to history, at least in part because they didn't work.[69] |
| Get vaccinated | Currently vaccination is only practical for hepatitis B (relevant for most sexually active people) and hepatitis A (for homosexual men). Several STD vaccines are currently under investigation.[72] |
| Take prophylactic antibiotics | Self medication is common among commercial sex workers and their clients in parts of the world where antibiotics are available without prescription.[63 64 73–75] Occasionally, formal prophylactic antibiotic programmes have been implemented.[76] The informal use of prophylactic antibiotics is associated with a lower prevalence[74] but ultimately linked with antibiotic resistance by *Neisseria gonorrhoeae*.[73 77] Prophylactic antibiotics and antivirals are more often taken after sex.[4] |
| Douche (vaginal or anal) | Douching is performed mainly for aesthetic reasons, but it is occasionally thought by lay people to protect sexual partners (clinical observation). As anal douching before sex has been associated with an increased HIV risk,[78–80] community groups may advocate anal douching well before sex to allow restoration of a putative mucous barrier before intercourse.[8] |
| Get tested and treated for STDs and other anogenital conditions | STD screening has often been mandated for sex workers, the military, and for premarital couples. In Sweden, which has a high acceptance of HIV testing, everybody who considers themselves to be at risk is required to be tested.[35] HIV testing can symbolise commitment to a relationship and the abandoning of safer sex.[9] Treatment for some other STDs reduces the risk of acquiring or transmitting HIV.[81–83] Homosexual men have been shown to adapt their sexual practices according to each other's HIV status ("negotiated safety"[4]). Self testing for HIV has even been advocated.[84] Treating other conditions such as candidiasis, atrophic vaginitis, balanitis,[85] and bacterial vaginosis[86] may reduce HIV risk. |
| Ensure that a sexual partner with HIV is on therapy, preferably with an undetectable viral load | This is controversial, though HIV treatment was documented to offer partial protection for partners even before combination therapy.[87] There is concern that widespread antiviral therapy may undermine safer sex programmes and it has been associated with the transmission of drug resistant HIV.[88] The limited correlation between virus levels in blood and semen is an issue at the individual level.[89] |
| Ensure that a sexual partner with herpes simplex virus type 2 (HSV-2) is on therapy | Stemming from a study that demonstrated greatly reduced subclinical shedding of HSV-2 by people taking suppressive aciclovir[90] a formal trial to see if partners are protected by valaciclovir suppression is now under way. Individual patients have used this strategy informally for several years, at least at the beginning of relationships (clinical observation). |
| Avoid dental flossing before oral sex | Because flossing can induce gum lacerations, community organisations recommend avoiding the practice immediately before fellatio.[8] |
| Avoid non-sexual exposure to STDs | At various times people have expressed concerns about a wide variety of non-sexual vectors and behaviours including public toilets,[73] banisters, towels, kissing, public baths, dogs, falling astride a ladder,[91] shaking hands, mosquitoes, communion cups, warm seats, and shared clothes.[92] It is unknown how these beliefs affect people's behaviour, though people using STD clinic toilets occasionally cover the toilet seat with paper (clinical observation). |
| Be discriminatory in choosing sexual partners | Partner selection may be intended to avoid STD exposure entirely or to decide on sexual practices according to each other's HIV infection status.[4] Various sexual partner selection criteria are discussed in table 2. |

*Table 2 Partner selection as a strategy to reduce the risk of STD*

| *Criteria* | *Example/comments* |
|---|---|
| Geography | People sense that certain regions have higher prevalences of STD, but these perceptions are easily distorted by publicity. For example, Australian men may chose to use condoms or to be abstinent when in Thailand but not in Vietnam or the Philippines (clinical observation). Within countries, partners from certain areas or social venues may be seen as "riskier".[41 50 93] |
| Ethnicity, race, class, and other stereotyping | Inside nations, ethnic minorities, travellers, and others may be linked with STD.[94 95] However, community reaction and health messages risk scapegoating[34 35 96 97] (fig 1) while providing false reassurance. |
| Commercial sex workers | Commercial sex workers can be variously perceived as infection carriers[61 95] or as proficient practitioners of safer sex (clinical observation). Clients may perceive "low class" (cheaper) sex workers to be at greater risk than "high class" (more expensive) sex workers,[23] often with some justification.[94 98] |
| Age and perceived sexual experience | Because disease risk (especially HIV) is cumulative, younger people may perceive unsafe sex with their age peers to be acceptable.[41 61] Newcomers to prostitution, "gay" sex, and other sexual milieux are often prized (clinical observation). At the extreme, virgins attract a premium and may even be thought to purge men of disease.[25 92 99] |
| Attractiveness and other physical attributes | Physical attributes including attractiveness or even smell may be treated as a surrogate marker of sexual experience[10] or infection status.[26 41] At one stage, and against tradition, slightly plump homosexual men found it easier to attract sexual partners than their thinner (possibly HIV infected) peers (clinical observation). Body shape changes associated with anti-HIV therapies[100] can be catastrophic for recruiting sexual partners (clinical observation). |
| Sex | Some women, despite heterosexual inclinations, only have sex with women in order to reduce their risk of STD. Some homosexually inclined men only have sex with women for the same reason (clinical observation). |
| "STD clearance" or "HIV test" certificates, and other declarations of freedom from infection | Whether genuine or bogus,[101] these documents are widely used by commercial sex workers, applicants to swingers' clubs, etc. They risk being used as a substitute for safer sex. One notable episode involved a boatload of New Zealand soldiers returning from Europe after the first world war wearing white rosettes on their lapels to declare their freedom from STD.[102] To this day, male clients commonly accept verbal reassurances from sex workers or their managers that they are "clean" (clinical observation). |
| Sexual and drug use history | Women's magazines frequently advocate inquiring about prospective partners' sexual history and prior drug use, but do not address the issues of how to confirm the information or how to use it. Hearst and Hulley[11] hypothesised "low risk" partner selection to be a superior strategy for HIV avoidance than safer sex (see text). Non-prostitute women are more sexually discriminant than men.[93] A preference by a homosexual man for insertive (rather than receptive) anal sex may be interpreted by a prospective partner as him being at lower risk of harbouring HIV.[41] |
| Condom use | Perversely, sometimes a person's insistence on the use of a condom is interpreted by a prospective sexual partner as a sign that they are at high risk or infected with an STD (clinical observation). The fear of this reaction may be a disincentive to produce a condom.[10] Others interpret a partner's willingness to use condoms as an indication that they are at lower risk of infection (clinical observation). |

have the strategy imposed on them by parents, lovers, or others.[9]

Many of the options in table 1 are not usually considered as STD avoidance measures because they have more obvious agendas such as paternity guarantee or religious meaning. While the wide adoption of some would probably reduce the incidence of some STDs—for example, female infibulation, they would be unlikely to receive wider acceptance.

Table 2 hints at the numerous, often barely conscious, decisions that people make in the process of sexual partner selection that are relevant to STD risk. A number of these strategies are spurious or should at least be viewed with caution because of their propensity for scapegoating or for providing false reassurance.[10] Hearst and Hulley[11] postulated that, for heterosexuals in the United States, choosing low risk sexual partners was several orders of magnitude safer for HIV than using condoms with indiscriminate partners. People they said should be avoided were "known HIV seropositives and anyone in a high risk group who had not stopped all high risk activities for at least 6 months and subsequently tested negative for HIV antibody." They did concede that "it is often difficult to judge whether a potential partner is likely to be at high risk unless one knows that person very well." Using more realistic estimates of the reliability of identifying high risk partners and of the protective efficacy of barrier methods, Wittkowski modelled a different outcome.[12] People often misjudge partners or partners conceal their risk.[13]


*Figure 1 An AIDS billboard on a beach in Sri Lanka in 1992. The woman's skin is unusually pale for a Sri Lankan suggesting either ill health or foreign origin.*

Nevertheless, most people in most places do practise a degree of sexual partner discrimination, often with STD avoidance in mind.[10] Concordant sexual mixing ("like having sex with like") can substantially suppress the prevalence of a common STD in a population.[14] Conversely, the congregation of very sexually active individuals can maintain or increase the incidence of an otherwise unsustainable STD.[15 16]

## Societal, religious, and institutional responses

The world's major religions tend to be opposed to premarital and extramarital sex and have solicited community condemnation and, occasionally, secular punishment for transgressors. Venereal disease has contributed to their case at least since the emergence of syphilis. However, societies vary in their attitude to non-marital sex.[17] Governments are often shy of too many "intrusions into the bedroom"

short of suppressing prostitution, homosexuality (particularly sodomy), and paedophilia. This doesn't preclude individuals taking the issue of infidelity into their own hands[18] (or teeth[19]), or vigilantism against sex workers.[20]

In many jurisdictions, "STD control" has long been synonymous with prostitution control.[21] Compulsory screening of sex workers, and even detention, has often been part of the package.[22–26] However, state regulated sex industries typically exclude, thus further marginalising, the highest risk sex workers. Sex workers are capable of numerous manoeuvres to evade detection or regulation.[27–31]

At some time in their history, many countries have placed behavioural restrictions on people diagnosed with STDs, including preclusions on sexual intercourse or marriage[1] or forceful detention.[27 32–35] Branding of the infected has even been used or at least proposed.[20 32 36 37] In Sweden, HIV testing has been vigorously promoted and it is relatively destigmatised though people with HIV infection are required to advise their sexual partners of their status and to use condoms for penetrative sex.[35] Moralists sometimes see STDs as providing a much needed deterrent to deviant sexual behaviour.[20]

The medical profession has traditionally been hostile to products associated with STD avoidance, particularly when they are not doctor initiated. Under the British Venereal Diseases Act (1917) and similar Australian acts, while pharmacists could dispense products such as antiseptics that were specifically requested by their customers, it was illegal to promote them or to provide any verbal or written advice on how to use them.[38 39]

## Discussion

Throughout history STD control has centred around society imposing sanctions on sexual behaviour—particularly for the prostitute, the homosexually active man, and the infected person. In the main this approach failed. It wasn't until the AIDS epidemic when biomedical approaches began to replace moral approaches, and the "at risk" communities were engaged as active players, that some countries witnessed substantial gains in STD/HIV control. Yet we remain only dimly aware of the spectrum of behaviours which are prevalent in the community that underwrite or undermine these gains.

Few clinicians reading this article will not have come across patients who have variously underestimated or overestimated their risk of contracting an STD from a sexual partner. The former typically present with an STD and the latter can be extremely difficult to reassure. Such is the vagary of partner selection. Fear of HIV in particular seems to be pervasive and to affect behaviour even in the lowest risk populations.[40] As clinicians we perhaps have too little contact with, and know too little about, those who have consciously opted out of STD risk through partner selection. Inevitably, our experience is dominated by its failures rather than its successes. But as it is potentially important,[41] partner selection warrants further study.

Many of the strategies listed here may only be partial strategies—that is, individuals may combine them with other partial strategies that are employed during or after sex. These latter strategies are listed in the accompanying article along with sex industry and military responses to STD.[4]

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