

HIV Transmission

GUIDELINES FOR ASSESSING RISK



A RESOURCE FOR EDUCATORS, COUNSELLORS
AND HEALTH CARE PROVIDERS

Canadian AIDS
Society



Société canadienne
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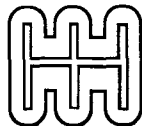
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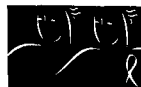
Third Edition (January 1999)

Craig McClure & Ian Grubb



HEALTH HOUNDS

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Foreword and Acknowledgements

HIV Transmission: Guidelines for Assessing Risk marks a significant step forward in the evolution of the Canadian AIDS Society's Safer Sex Guidelines. For the first time, the revised and renamed guidelines incorporate injection drug use and maternal transmission, recognizing them as major components of HIV transmission in the community. In addition, a range of biological factors, including mucosal immunity, anti-HIV treatments and viral load are included that highlight the complex factors that may increase or reduce an individual's risk of HIV infection.

The model used to categorize levels of risk associated with various activities has been refined in an attempt to offer greater clarity to the educator or health care provider. Activities previously referred to as having a 'theoretical' risk of HIV transmission are now categorized as having 'negligible' risk, i.e. a risk that is able to be ignored in most situations. Factors which may contribute to an increased risk from an activity with a 'negligible' risk of HIV transmission are clearly stated.

HIV transmission does not occur within a biological vacuum. Research over the past few years has demonstrated a complex interplay between biological, sociological, psychological and economic factors, which influence the vulnerability of individuals and specific groups of individuals to HIV transmission. It has become clearer and clearer that issues of class, power and socio-economic status are major determinants of susceptibility to HIV infection. While the model of attributing risk of HIV transmission to various activities has been retained, an introductory section has been included in these guidelines that attempts to contextualize the scientific information presented in later sections. Educators and health care providers must realize that in order to successfully prevent HIV transmission they must incorporate prevention information within the reality of an individual's life. Using a condom may not be possible for everyone, for a variety of complex reasons. Similarly, abstaining from injecting drugs or using a new needle and syringe every time a drug is injected may not be possible for everyone. All educators and health care providers should work towards developing strategies that can help reduce an individual's risk of HIV infection, even if that risk is not eliminated. This may mean, for example, that assisting an individual to find stable housing may be more effective at preventing HIV transmission than providing the individual with a box of condoms.

We hope that these guidelines offer a framework from which to work with individuals from diverse communities and life experiences. These guidelines are by no means the final word. As information and circumstances change, so too will these guidelines. The HIV epidemic is far from over. In fact, it is constantly growing and shifting. Treatment advances are enabling many people with HIV disease to live longer and healthier than in the past. However, we are a long way from a cure, and there is no vaccine in sight to prevent further infections. HIV prevention education remains our strongest weapon in the fight against HIV and AIDS.

The Canadian AIDS Society continues to acknowledge the assistance of the organizations and individuals who contributed to the first and second editions of this document (in 1988 and 1993 respectively).

The authors wish to express their gratitude to those who assisted in developing the framework for this third edition. In particular, they are grateful for the time, energy and enthusiasm of the Review Committee, comprising Diane Aubry (HIV/AIDS Prevention and Community Action Programs, Health Canada), Sharon Baxter (Canadian AIDS Society), Scott Gibson (Public Health Department, York Region), Colin Kovacs (HIV Primary Care Physician, Toronto), René Lavoie (Séro Zéro, Montreal), John Maxwell (AIDS Committee of Toronto), Paul Perchal (AIDS Vancouver) and Margaret Shaw (Hassle Free Clinic, Toronto).

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The guidelines were originally translated into French by Jean Dussault. The guidelines were then culturally adapted by a group of individuals at Séro Zéro, Montreal. We feel these guidelines are culturally sound and thank all those who worked on this process.

The consultation process undertaken for this edition involved educators, health care providers, researchers, people living with HIV/AIDS and others from many organizations across Canada. We would particularly like to acknowledge the contributions of Darcy Albert, Daniel Andrews, Patricia Balogh, Kathleen Beechinor, Brian Conway, Bill Coleman, Clarence Crossman, Jane Cullingworth, Ron de Burger, Jeff Dodds, Minty Fownes, John Gaylord, Charles Gillis, Alain Godmaire, Joyce Guin, Irene Howlett, Nancy Hunter, Andrew Johnson, Donna Keystone, Vikki Kett, Christian LaForce, Beth Lambert, Judie MacDougall, Frank McGee, Ned MacInnis, Albert McLeod, Lynn McNutt, John McTavish, Laverne Monette, Karen Muirhead, Ted Myers, Dwight Tyler Pennock, Chantale Perron, Dave Pineau, Greg Robinson, James Shedden, Robert St Pierre, Darien Taylor, Marco Theriault, Wayne Travers, Bruno Turmel, Keith Walls, Liz Walker, Sharon Walmsley and Gerard Yetman. Many of these individuals included their colleagues in the consultation, and we thank all those who devoted time and energy to the project.

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Section I

HIV Risk Assessment: Sex, Drug Use and Maternal Transmission

Who is this document for?

This document:

- (1) Offers a framework for judging the levels of risk of HIV transmission through various activities;
- (2) Summarizes the implications of the current medical and scientific evidence on HIV transmission; and
- (3) Discusses risk reduction strategies and psychosocial factors which may affect a person's ability to adopt them.

These guidelines are intended as a resource for educators, counsellors, health care providers and others who provide information and support about safer sex, substance use and HIV transmission in various community settings. It is assumed that the reader will have a degree of familiarity with scientific and technical language about HIV transmission and risk reduction. The new companion brochure "*HIV Transmission - Things You Should Know*", which contains a plain language summary of the information contained here, is intended for distribution to service users.

Although these guidelines are not a complete "how to" guide for service providers, they offer a place from which to start. Other sources need to be

consulted to learn more about the means of equipping people with the understanding, motivation, skills, resources and social support necessary to make informed decisions about their sexual, substance-using and other life choices.

Above all, this document is intended as a resource tool to assist in the delivery of **consistent and coherent** information and support across a variety of settings.

How the Document was Produced

The first edition of the guidelines originated in 1988 from a request by member organizations of the Canadian AIDS Society (CAS), who were concerned by the confusion resulting from the distribution of inconsistent safer sex advice across the country.

In response, CAS brought together a group of scientific experts and educators to produce the approach that appeared in the highly successful first edition of these guidelines. A second edition appeared in 1994. This third edition results from a three-part process: (1) an exhaustive review of the literature; (2) a national consultation of medical, scientific and community-based experts to assess the continuing accuracy of the document, how it had

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been used and how it could be improved; and (3) review of a draft of the final document by a committee of educators, counsellors, health care providers and health care policy analysts. The ultimate objective of regularly reviewing these guidelines is to ensure that the document reflects new information and understanding about HIV transmission and retains its reputation as one of the most authoritative publications of its kind.

Affirming Sexuality and the Risk Reduction Approach

This edition varies from previous versions of the guidelines in that it does not confine the subject of HIV transmission to sexual activity alone. Since the last edition was produced, it has become evident that incorporating information on HIV transmission through injection drug use and maternal transmission has become crucial to the management of the epidemic. In preparing this edition of the guidelines, it seemed important to adapt the existing framework to incorporate these issues, though the main focus remains on sexuality and sexual practices. It is for this reason that the general term “risk reduction” has been used in reference to both safer sex and safe injecting practices, and to the options available to pregnant women living with HIV.

Since the beginning of the HIV epidemic, it has become a truism that prevention education represents our best hope of controlling the effects of this virus. Despite the importance of HIV prevention messages, however, the public has not always been given basic, complete and easily understood information which distinguishes sexual and substance use practices that place individuals at risk of HIV infection from practices they can enjoy without worry of infection.

Social disapproval and discomfort about sexuality and drug use have often led either to unhelpful coyness and innuendo or to self-censorship and official silence. The HIV epidemic too often has been used, either consciously or haphazardly, to reinforce notions of “good” and “bad” behaviour.

The perspective of the Canadian AIDS Society concerning risk reduction has four dimensions:

(1) Effective prevention and sexual pleasure are compatible. Research has shown that individuals will voluntarily practise risk-reducing behaviour if they feel good about themselves, about the preventive measures they are taking and about their capacity to incorporate such measures into their lives.

(2) HIV prevention messages should focus upon substance use as a health issue, rather than as a moral or criminal issue. Effective prevention measures need to acknowledge that stopping alcohol and other substance use is not possible for everyone, but that risk reduction strategies offer a variety of practical options aimed at decreasing HIV transmission associated with substance use.

(3) Women living with HIV have the right to make their own decisions about pregnancy and childbirth. They should be provided with accurate information about their options, including termination of the pregnancy and therapeutic options to reduce the risk of HIV transmission to the fetus.

(4) Information, education and counselling about HIV transmission must take into account the wide variety of psychological and social factors that can influence a person’s capacity to adopt or maintain risk-reducing behaviour.

In order to achieve and to reinforce positive behaviour change, it is important to affirm both sexuality and risk reduction and to acknowledge the key role they play in personal health. Healthy sexuality and choices about substance use, of course, will mean different things to different people, depending on their experiences, values and customs. Rather than attempting to get diverse groups of people to conform to a specific moral code or lifestyle norm, we are more likely to bring about changes by presenting risk reduction options most appropriate to the practices and desires of different individuals. That is why the emphasis of these

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guidelines is on information that can be applied to everyone and that respects individual choice. This edition of the guidelines refrains from the notion of “giving advice” and focuses instead on the provision of information and support, which will enable people to make informed choices.

Subject to the limitations imposed by anatomy, it is also assumed in these guidelines that no particular activity is confined to any one group or class of people. Any or all of the activities described here may be practiced by gay men, lesbians, heterosexual and bisexual men and women, two-spirited people¹ and transgendered people in all racial, linguistic and ethnocultural communities.

It is hoped that the guidelines will encourage practices that individuals feel comfortable with, that bring them pleasure, and that promote their health and the health of others.

The Challenge of Providing Accurate Information

The safer sex strategy with which we are now familiar was developed before HIV was identified as the underlying cause of AIDS. The earliest AIDS-specific safer sex guidelines date from 1983 and were modelled on precautions to reduce the transmission of hepatitis B, then prevalent in communities becoming affected by AIDS. In the 15 years since those first prevention messages, a considerable amount of research has been conducted that confirms much of the initial information and clarifies different levels of risk for different sexual practices.

However, providing information about safer sex cannot remove all degrees of ambiguity from our messages. The word “safer” implies that a level of safety can be achieved, but that absolute guarantees do not exist. This lack of certainty can lead to anxieties that inhibit some people’s ability to adopt

or maintain risk-reducing practices. These guidelines therefore now mainly refer to “risk reduction” or “HIV prevention” rather than “safer sex”. The guidelines also acknowledge that although total “risk elimination” may be the objective of the hyper-vigilant, it is not necessarily achievable (or even desirable) in the context of many individuals’ real lives.

Uncertainty has also led to a wide variation in risk reduction information offered by different sources. Those wishing to educate themselves about HIV transmission have often been confused by conflicting information, differences in emphasis, and inconsistent terminology. For example, the same sex act could be described in one pamphlet as “probably safe” and in another as “possibly dangerous.”

Providing basic information to injection drug users about how to avoid HIV transmission is no less complex. The uneven availability of needle exchange and disposal facilities, the frequency with which some users inject, uncertainty about the efficacy of some equipment cleaning techniques and the lack of access to information about other health risks associated with needle use, all present significant challenges to counsellors, educators and health care providers. Similarly, some of the options available to pregnant women with HIV may not totally eliminate the risk of transmission to the fetus.

The goal of this document is to offer a logical approach to the theory and evidence of HIV transmission, and to provide a consistent framework for realistically assessing the risk represented by various activities.

What Do We Mean By Risk?

Because of the uncertainties around HIV transmission, educators and counsellors have attempted to appeal to a difficult abstract concept:

¹ *Aboriginal, lesbian, gay and bisexual people.*

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levels of risk. The model used in these guidelines places sexual and injecting activities into categories according to their level of risk of HIV transmission.

We negotiate risk in our lives every day and make decisions, both conscious and unconscious, about the level of risk taking we can cope with. Every time we ride a bicycle, walk on city sidewalks, drive a car, or get on an airplane, we are taking a risk. We hear a great deal about the health risks of drinking coffee, smoking cigarettes or drinking alcohol—risks that may eventually shorten our lives—and our actions show how we deal with that knowledge. The more we are aware of the risk, the better we are able to choose our actions. Sexual, drug-taking and reproductive choices should be placed in the context of those other risks we face in our lives.

Risk reduction information should acknowledge the options that can be exercised by people who feel comfortable with some risk, as well as validate the more cautious approaches of those who want greater assurances. There are “no-risk” options for engaging in sex and substance use and some will choose them. For many people, however, some level of risk is probably either acceptable or unavoidable, making it necessary to include a broad range of risk reduction choices in HIV prevention education.

Criticisms of the Risk Model

There have been some criticisms of the use of the risk model in HIV prevention information. One simple though compelling criticism is that risk categories do not reflect people’s “real world” thinking about sexuality, nor do they reflect the “continuum” along which sexual activity occurs (the flow and ebb of sex, with one act stimulating or leading into another). Another criticism is that the use of risk categories gives “risk in general” a bad name. Some educators point out that “risk-taking” generally in life can be healthy and rewarding, and that only by taking risks do people

discover and fulfill their potential as human beings. On the other hand, some groups of people who are deemed to be “at risk” for HIV, such as sex trade workers, street-involved people and injection drug users, take many risks as part of daily life in order to survive.

Some educators and writers have also been critical of the juxtaposition of the terms “risky” and “safe” (or “safer”). As the New Zealand AIDS Foundation points out in its Safe Sex Guidelines: Defining Risk:

“Safe” is an antonym of “dangerous”, not of “risky”... The English language does not provide a clear antonym of “risk”. We are stuck by usage of “safe”... meaning “free of risk (of HIV transmission)”, not “free of danger”.

This all-too-easy association of “risk” with “danger” has led to misunderstandings about the risk model. For the purposes of these guidelines, it must be made clear that “risk” refers to the “likelihood or chance” of HIV transmission occurring. As the New Zealand guidelines state, “the danger (what may happen, e.g. protracted illness and death) once HIV has been transmitted is a separate issue... In thinking about HIV transmission, people may overestimate the risks (which can be quite small) because of the enormous danger which HIV presents. More recently, learning of the numerically small risk of even the most risky practices, some have mistakenly concluded that the danger is also small.”²

Unfortunately, attempts which have been made to quantify the chance or likelihood (the risk) that a *single episode* of a particular activity will lead to HIV transmission have not been able to contextualise sexual activity and have the potential to engender a false sense of security in certain individuals.

Notwithstanding the criticisms of the risk model, CAS does not believe that any satisfactorily coherent alternative to it has yet been proposed. Many educators, counsellors and health care providers

² Hugh Young. *Safe Sex Guidelines: Defining Risk For Gay Men and Other Men who Have Sex with Men*, New Zealand AIDS Foundation, 1995.

continue to find it a highly useful and flexible framework upon which to base their prevention education messages. Therefore, as in the past, this edition of the guidelines classifies activities according to degrees of risk by taking into consideration 1) the potential for transmission and 2) actual scientific evidence that transmission has occurred.

What is an "Acceptable Risk"?

The question of what constitutes an acceptable risk lies at the heart of the challenge of HIV prevention. Should we be encouraging people to reduce risk, or to totally eliminate it?

Among the "grey zones" of uncertainty in HIV prevention education, one of the most frequent difficulties facing educators and counsellors is the question of what to say about the practices of oral sex (fellatio and cunnilingus).

As outlined in later sections, the different ways of practicing fellatio and cunnilingus have all been assessed as sex acts with negligible or low risk of HIV infection, as they were in the first and second edition of these guidelines (although the term "theoretical" was used in place of "negligible" in the previous editions). This classification became the most debated aspect of the 1988 edition of the Safer Sex Guidelines, and was seen as the major departure from earlier, more cautious, safer sex advice.

Since the mid-1980s, there has been a significant amount of research to show that oral transmission of HIV can happen, although it seems to occur rarely and usually only under certain conditions. Similarly, with protected vaginal or anal intercourse, even though we know that a properly used condom greatly reduces risk, condoms have sometimes failed and transmissions have occurred.

From the broader perspective of public health strategy, this document is guided by a commitment to risk reduction as the most achievable goal in behaviour change. From the point of view of the individual, the document assumes that it is better to provide information about both options: reducing risk and eliminating risk. This way individuals can determine which choice is appropriate for themselves.

With vaginal and anal intercourse, for example, individuals who are not comfortable with the possibility of condom failure can take further steps to protect themselves. In addition to using a condom, they can stop intercourse before ejaculation. If individuals want to reduce risk even further, they can avoid vaginal or anal intercourse altogether.

During oral sex, there is also a series of options that individuals can choose: they can avoid cunnilingus during menstruation, they can stop fellatio before ejaculation occurs, they can use a condom or other latex barrier, or they can avoid the practice altogether.

When injecting drugs, the risk of HIV transmission is avoided by using a new needle and syringe every time, or by ensuring that no one else shares the same needle. Where sharing is unavoidable, risk is reduced by proper cleaning of the needle and syringe using bleach and water. To reduce the risk of other health problems associated with injection drug use, some drugs may be swallowed, smoked or snorted instead.

To reduce the risk of maternal transmission of HIV to the fetus in the uterus or during delivery, an HIV-positive woman also has options. She may choose to terminate the pregnancy, or she may choose to take prenatal anti-HIV therapy. She may choose neither of those options and let the pregnancy run its course. After birth, she may refrain from breast-feeding the child.

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Ultimately, it is up to individuals and their partners to choose the options that are right for them. If they are given complete information, positive motivation, and a chance to develop social skills related to sex and substance use, individuals will usually act in their own best interests. In some cases, information alone may not be enough. Both the wish to reduce or to eliminate risk and the capacity to do so are central to effective adoption of prevention measures. The challenge for educators and counsellors is to find ways to help people feel good about risk reduction strategies and to address issues that prevent them being used.

Section II

Psychosocial Aspects of HIV Transmission

If educators and counsellors focus on individual behaviour exclusively, without reference to social context, it will blind them to a complete picture of how people do or do not adopt risk reduction practices. We now know that the risk of transmission of HIV is affected by a multiplicity of psychological and societal issues at both individual and systemic levels. In producing this third edition of the guidelines, it seemed essential to highlight some of these issues. Though it is by no means comprehensive, this section offers a psychosocial framework intended to provide context to the risk assessment model contained in Sections III and IV.

Poverty and Health

There is strong evidence that lower income and socioeconomic status are associated with poorer health in general, including lower standards of reproductive and sexual health³. Earlier initiation into sexual activity and riskier sexual practices are more common among youth with lower socioeconomic status. Economic inequities often contribute to the continuing marginalization of certain social groups, including women, gay men, aboriginal and ethnocultural communities, sex trade workers, people with disabilities, substance users, and the young. This marginalization is often manifested in reduced access to education,

housing and health care, low self-esteem, a diminished degree of control over one's life and environment, unequal power in relationships and a lower capacity to make positive choices about health, including strategies aimed at reducing the risk of HIV transmission.

In addition to socioeconomic status, a range of other inter-related class, cultural and psychological factors can influence people's capacity to reduce their risk of HIV transmission. This section illustrates how some of these factors may be manifested within certain marginalized groups. However, it must be emphasized that such factors are not always peculiar to any one group, and that not all members of any one group will be similarly affected. Suggestions for further reading are included in the Bibliography.

Power and Negotiation

Some people lack the power or self-esteem necessary to negotiate the use of risk reduction techniques in their sexual relationships. For example, in relationships, particularly those that involve sexual, emotional or physical abuse, many people are at risk of HIV infection by partners who regard them as their "property", who refuse to use condoms or who for other reasons consider unprotected intercourse to be "a right". It is possible

³ *Framework on Sexual and Reproductive Health*, Health Canada, 1998

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that some people with these attitudes are unaware of or may deny their HIV-positive status. In such relationships, a person's lack of power or self-esteem is likely to affect her/his ability to decline sexual activity or to insist upon protection that will reduce risk.

Some men consider it unacceptable for a woman to refuse sexual relations. By insisting upon condom use a woman may be mistakenly viewed as promiscuous, disloyal, unfaithful or "a bad wife". The most extreme deprivation of a woman's ability to practice risk-reducing behaviour occurs in the case of rape or other sexual assault. Health Canada has recently published guidelines for counsellors on HIV and sexual violence against women.⁴ In addition, women from aboriginal and ethnocultural communities, or women who experience isolation by virtue of geography or their designated role, may have limited access to appropriate forms of information and support.

Young people are prone to taking risks and experimenting with drugs, alcohol and sexuality, highlighting the importance of education and information about risk reduction. However many young people also experience marginalization due to factors such as lack of access to housing and education, unemployment, family breakdown, poverty and low self-esteem. Young people, particularly the homeless, are vulnerable to sexual exploitation. One study found high levels of STDs, substance use and inconsistent condom use among Canadian street youth⁵. Young people may be inclined to consider themselves invulnerable or immortal, to think that "HIV and STDs only happen to other/older people" or to judge a person's HIV status based on appearance ("S/he looks healthy"). Without accurate information, they may be susceptible to misleading assurances that "there is no risk" or "don't worry, I'm healthy". Although many young people are sexually active and/or inject drugs, not all have ready access to condoms, clean needles, peer support or risk reduction information in a form that is understandable to them.

Recent evidence suggests that experience of childhood abuse increases an individual's risk of HIV infection.⁶ Any or all of these factors combined can render young people especially vulnerable to the risk of HIV infection.

Potential vulnerability to abuses of sexual and emotional power and lack of access to risk reduction information also exist for people with intellectual, psychological or physical disabilities, or mental illness. Studies have shown a statistically significant association between substance use, inconsistent condom use and other risk behaviours among people with severe mental illness and psychiatric disabilities⁷.

The risk of HIV transmission for people in prison is particularly high. Injection drug use, tattooing and sexual activity (including sexual assault and the trading of sex for favours) are known to be commonplace in prisons, but because authorities do not want to be seen to condone what they regard as illegal or "immoral" activity, the availability of condoms is limited and clean needles and syringes are seldom available. Access to health care for prisoners may be less frequent or of a lower standard than for those outside the prison system.

Grief, Loss and Stigma

In Canada and other developed countries, HIV infection rates have been highest among gay men. The resulting misconception that HIV infection is "a gay disease" has led to a false sense of security among people who are not gay, but who practice activities that place them at risk of HIV infection. Such attitudes have contributed to the fact that in the developed world, gay men have borne the brunt of prejudice and discrimination associated with HIV disease and have compounded the substantial grief, loss and depression it has caused.

⁴ Health Canada, HIV and Sexual Violence Against Women, 1998.

⁵ MacDonald NE, Fisher WA, Wells GA, Doherty JA, Bowie WR. Canadian street youth: correlates of sexual risk-taking activity, *Pediatric Infectious Disease Journal*, 13(8): 690-7, 1994 Aug.

⁶ Sterk, C.E. et al. *Reducing Harm: The effects of childhood abuse on negotiating HIV risk reduction*. 12th World AIDS Conference Abstract 238/33382, 1998.

⁷ Thompson, S.C. et al. HIV risk behaviour and HIV testing of psychiatric patients in Melbourne. *Aust & NZ Journal of Psychiatry*, Aug 1997; Menon A.S. et al. Substance use during sex and unsafe sexual behaviours among acute psychiatric patients. *Psychiatric Services*, Aug 1997.

Safer sex was conceived in the mid-1980's as a short-term response to an immediate health crisis. The failure to find a cure for or a vaccine against HIV disease means that many gay men have been required to permanently incorporate risk reduction and the possibility of HIV infection into their daily lives. Many have been able to do this successfully for many years. Others find that sustaining risk-reducing behaviour in the face of continued death, illness and anxiety has not been easy. This is especially so for those who have lost significant numbers of friends and acquaintances to HIV disease. Some have developed a sense of inevitability or invulnerability about their own likelihood of being infected, resulting in such phenomena as "survivor guilt" and "condom fatigue". In addition, there is some evidence that the development of new treatments for HIV disease has led to a false sense of security among some individuals either about the likelihood or the consequences of HIV infection⁸. These feelings may lead to decreased practice of risk reduction strategies and should be taken seriously by any educator, counsellor or health care provider working with people who have lived with HIV, or the potential of HIV infection, over many years.

For gay men coming to terms with their sexual orientation or in the process of coming out, HIV entails grappling with an additional set of fears, prejudices and challenges. Men who have sex with men but who are not attached to, or who do not identify with, the gay community, may have limited access to information about HIV or may mistakenly consider themselves to be at reduced risk of HIV infection. However, being 'out' in and of itself does not necessarily increase risk reduction practices.⁹

Alcohol and Other Substances

The use of alcohol and other substances can impair a person's judgement while engaging in activities that involve a risk of HIV transmission, especially sexual activities. When drunk or under the influence of other substances, the potential to disregard risk reduction information is increased. Being drunk or high can diminish one's usual sense of responsibility.

Research indicates that alcohol and other substance use can act as one in a series of potential "triggers" leading to the abandonment of risk reduction strategies. The seeds of sexual activity are often sown in environments where alcohol consumption and the use of other drugs are encouraged. Accordingly, many people engage in sexual activity, especially with casual partners, when they are drunk or high.

Frequent alcohol and/or other substance use and casual sex may be associated with low self-esteem. Use of alcohol and other substances to facilitate intimacy, the substitution of sex for intimacy, and the tendency of alcohol and other substances to impair a person's usual sense of responsibility for themselves and for others, are all issues which counsellors, educators and health care providers may need to explore.

Recent evidence suggests that injection drug use is increasingly becoming an important risk factor for aboriginal people in Canada. It appears to be involved in half or more of new infections in aboriginal communities.¹⁰ The increasing popularity of cocaine injection in urban centres also poses challenges for HIV prevention efforts, partly due to the high frequency of daily injections and needle sharing with sex partners.¹¹

⁸ Diclemente, R. et al. *Russian roulette: Are persons being treated with protease inhibitors gambling with high risk sex?* 12th World AIDS Conference Abstract 14143, 1998.

⁹ Appleby, R. et al. *Gay identification: Does it reduce or increase sexual risk-taking?* 12th World AIDS Conference Abstract 23275, 1998.

¹⁰ Nguyen, M. et al. *HIV among aboriginal people in Canada: Injection drug use is a main concern.* 12th World AIDS Conference, 1998.

¹¹ Freeman, R. and Williams, M.L. *Are high-frequency amphetamine injectors at elevated risk for HIV? Results from a US multisite sample.* 12th World AIDS Conference Abstract 60254, 1998.

Relationships

People choose different types of relationships for many different reasons. Whether or not to be monogamous is one decision that many couples need to consider. One reason for choosing monogamy for HIV-negative partners may be the desire to dispense with condom use in the relationship.

Non-monogamous couples may also make agreements about dispensing with condoms within the relationship on condition that high risk sexual and injecting activities are not practised outside the relationship (such an arrangement is sometimes referred to as “negotiated safety”). One study has shown that many non-monogamous, HIV-negative gay couples practice a form of negotiated safety as an HIV-prevention strategy.¹² It must be noted that while this strategy may be successful in preventing HIV transmission, it does not prevent transmission of other sexually transmitted diseases (STDs). Infection with other STDs can increase the risk of HIV transmission. Some educators are reluctant to promote negotiated safety as a prevention tool, but do acknowledge the importance of partners discussing these issues within their relationship.

Any decision to abandon condoms within a relationship should be made very carefully. Testing for HIV and counselling about risk reduction are essential before dispensing with condoms. The effectiveness of decisions about monogamy and negotiated safety as HIV-prevention strategies will depend to a great degree on the levels of **equality, honesty, trust and communication** that exist within the relationship.

It is important that both partners have the same understanding about what monogamy or negotiated safety mean. Some people consider themselves monogamous even though they have sex with other people at specific times (for example, when one or the other partner is out of town). For others, monogamy means sexual exclusivity. It is important that partners have the same understandings about the terms they are using and what kind of sex, if any, is

permitted outside the relationship. Different understandings about these issues may indicate a lack of communication or lead to a breakdown of trust, creating the potential for HIV infection to occur in one or both partners. Whether monogamous or non-monogamous, partners also need to agree about what will happen if there is a breach of their particular arrangement. This may involve the end of the relationship, a return to condom use or further HIV testing.

It should be emphasized that periodic testing for HIV is no substitute for established risk reduction strategies.

“If at first you don’t succeed...”

Many factors can affect a person’s ability to maintain risk-reducing behaviours. Counsellors, educators and health care providers need to incorporate an awareness of these factors into their counselling about risk reduction and HIV transmission.

It is important not to regard people who are not always able to maintain risk reduction strategies as “bad” or as having “failed”. Despite the varying risks, no single occurrence of a particular activity is *guaranteed* to result in HIV transmission any more than it is certain *not* to result in transmission. An individual’s commitment or capacity to reduce risk is seldom set in stone, and can be influenced at any given time by a wide range of factors. It is counterproductive to attribute blame or guilt if people “make mistakes”. Counsellors, educators and health care providers should create a non-judgmental environment in which the broader issues relating to sexuality, power, self-esteem and HIV transmission may be discussed. The risk model contained in these guidelines is intended to assist individuals to assess their own acceptable level of risk. When providing information and support, the objective should always be to encourage and enable individuals to maintain an acceptable level of risk for themselves in the future.

¹² Kippax, S, Noble J, Prestage G, Crawford JM, Campbell D, Baxter D, Cooper D. *Sexual negotiation in the AIDS era: negotiated safety revisited. AIDS.* 1997.

Positive or Negative: Risk Reduction is for Everyone

There are two common societal reactions to HIV that pose problems for people living with HIV, and that make widespread adoption of risk reduction practices more difficult to achieve.

One reaction is that people living with HIV are no longer entitled to enjoy sex and intimacy. The other reaction is that people engaging in sex or injection drug use with someone they know to be HIV-positive often experience an irrational fear that is absent when they don't know their partner's serostatus. Even if they rationally understand the principles of barrier protection, they may ignore them and insist on additional precautions.

Whether or not HIV-positive individuals have a responsibility to inform their sex and injecting partners about their status, even if they take appropriate precautions, has not been decided by the courts. The 1998 *Cuerrier* decision decided that there is a duty to disclose HIV-positive status if failing to disclose would expose the sexual partner to a "significant risk of serious bodily harm." The decision therefore makes it clear that HIV-positive status must be disclosed before *unprotected* vaginal (and presumably anal) sexual intercourse. But the decision did not offer a clear answer to the question of whether disclosure is also required when appropriate precautions are taken.

For the purposes of these guidelines, practices have been assessed for risk based on actual evidence of HIV transmission. That means the guidelines are consistent and valid for everyone, including people who are living with HIV. To put a different burden of responsibility on those who are HIV-positive would create a double standard in our messages: practise one set of guidelines with those who are infected and practise another with those who are not infected. In fact, many people who are HIV-positive do not even know they are infected.

Most people in a growing, trusting relationship will find it desirable to share information about their serostatus with their partners. The circumstances and timing under which people living with HIV will want, and feel able, to tell others they are HIV-positive will vary greatly. Some may want to tell all their sex partners immediately, while others may find that revealing such information creates greater difficulties for them. Some people, for example, may perceive themselves to be in physical danger if they tell their sex partners.

Consistency and coherency are the essential features of the risk model presented here. An expectation that people living with HIV should have to exercise additional precautions appears to remove the burden of responsibility from the other partner. It would send contradictory messages about the validity of the precautions recommended. Making decisions about behaviour based on any assessment of the prevalence of HIV in particular communities or groups of people leads to false assumptions and is inappropriate for the purpose of HIV prevention information.

All people who are sexually active or who inject drugs should be encouraged to take precautions against HIV infection. At the same time, we should not forget the complex emotional issues that sex raises for people once they have been tested and told they are HIV positive. That is why testing must be accompanied by empathic and informed counselling. People living with HIV should be supported to make positive decisions about their sexual and substance-using behaviour that balance their emotional needs with the health and safety of themselves and others. Sexuality counselling should be part of ongoing follow-up support for people living with HIV and their partners.

Enhancing the Health of People living with HIV

Although these guidelines apply equally to people who are living with HIV and those who are not infected, there are further considerations for the health of those who are HIV-positive. Making sex and substance use healthier can be part of a broad-based health promotion approach for people living with HIV. Just as they need to consider a wide range of treatment and other options for improving and maintaining mental and physical health, people living with HIV should be aware of possible exposure to other infections.

The infections of primary concern here are sexually transmitted diseases (STDs). People with HIV should be aware that other STDs could affect the immune system and could raise viral load (the amount of HIV in different fluids and tissues in the body at a given time) and potentially trigger the progression of HIV from an asymptomatic seropositive state to illness. There is also some indication that STDs can have more pronounced effects, and be harder to treat, in men and women living with HIV. Hepatitis C and other blood-borne infections from sharing needles also pose a greater risk to people living with HIV/AIDS.

People living with HIV also need to be aware of the potential risks in having unprotected intercourse or sharing needles with someone who is also HIV-positive. Although there is no clear evidence yet to show that further exposure to HIV is either harmful or neutral, two points should be considered.

First, any infection affects the immune response and may activate cells that HIV targets. Second, different strains of HIV may produce illness at varying rates or may affect different systems in the body. Infection with a new strain may cause new problems or may result in the development of premature resistance to some anti-HIV treatments. Given these possibilities, risk reduction strategies should continue to be promoted to men and women living with HIV.

Section III

HIV Transmission: A Model for Assessing Risk

Evolution of the Model

The model of risk presented here has evolved from the earliest examples of safer sex advice. As discussed earlier, the notion of risk is, in itself, imprecise, and prevents us from having a completely objective and quantifiable way in which to express degrees of likelihood of HIV transmission. However, bearing these limitations in mind, the levels of risk of various activities are organized into four categories, based on the potential for transmission of HIV and the documented evidence that transmission has actually occurred. These categories of HIV transmission are: no risk; negligible risk; low risk; high risk.

This four-level model represents an evolution of the first and second editions of the guidelines. The first edition called negligible risk “minimal risk” and lumped it under one all-purpose category called “minimal-to-low risk”. In the second edition, negligible risk was referred to as “theoretical risk”. Many readers of the first edition were confused by the way in which an activity’s risk level could change from “minimal” to “low” within a single category. Some readers of the second edition rightly noted that a “theoretical risk” could be large or small and found this term confusing. These changes are mostly a matter of renaming for the purpose of clarity. It is hoped that the expression “negligible

risk” (adopted from the New Zealand AIDS Foundation guidelines) offers a more precise and practical guide.

If these categories or levels were represented graphically on a continuous line, negligible and low risk would be much closer to the no risk end of the continuum. There is no “middle” level of risk. The graphic representation of the risk model appearing in this edition of the guidelines is represented by a curve to reflect the continuum along which sexual activity and sexual risk-taking occur.

It is anticipated that future editions of the guidelines will continue to evolve as we learn more about HIV transmission and its social consequences.

Principles of HIV Transmission

The routes of HIV transmission are well established:

- specific types of sexual activity;
- sharing used, uncleaned needles or syringes and other situations that involve piercing of the skin;
- mother-to-child transmission, in the uterus, during childbirth or through breast-feeding; and
- receiving transfusions of infected blood or blood products, transplanted organs, or donated sperm (for insemination).

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In each of these routes, certain conditions must exist in order for HIV transmission to occur. These conditions are:

1. There must be a source of infection.

This factor, unfortunately, is too often interpreted to mean an HIV-infected individual. Relying on the identification of a person as a source of infection is not useful in developing prevention messages, since there is no means of guessing whether a person is infected or not. It is more appropriate to consider the presence of HIV in certain body fluids, such as blood, semen, vaginal fluid or breast milk, as the potential source of infection.

2. There must be a means of transmission.

Someone must engage in a sexual or injecting activity that can allow HIV transmission to occur. Not all sexual or injecting activities offer such a mode of transmission. Maternal transmission of HIV from an HIV-positive woman to the fetus in the uterus, during delivery or by breast-feeding during infancy is also possible.

3. There must be a host susceptible to infection.

The virus is harmless until it finds a host—or, more accurately, susceptible cells within the host's body. Everybody is considered to be a host susceptible to infection.

4. There must be an appropriate route of entry to the target cells of the body.

In order for HIV infection to occur, infected blood, semen, vaginal fluid or breast milk must reach the HIV-susceptible cells in the blood, usually through a break in the skin, absorption through mucosal membranes (also known as "mucosa") or through some disruption to the mucosa. Mucosa are the moist surfaces of the body which line most of the body cavities and hollow internal organs such as the mouth, nose, eyelids, rectum, vagina and urethra.

5. There must be a sufficient level of virus delivered to establish infection.

Because of a higher concentration or quantity of virus, some body fluids are efficient media for transmitting HIV, while others are not. Semen, vaginal fluid, blood

and breast milk are of most concern in HIV transmission. Although HIV has also been isolated in urine, saliva & tears, it is highly unlikely that it will be present in sufficient concentrations for transmission to occur (even if the other four conditions were fulfilled). The mere presence of virus is, of course, only one of the five required conditions. Furthermore, saliva is now known to inhibit HIV.

HIV has been isolated in pre-ejaculatory fluid (pre-cum). Though the concentration of HIV in pre-cum is likely to be low, it cannot be discounted as a potential source of transmission.

Factors Used to Determine the Level of Risk

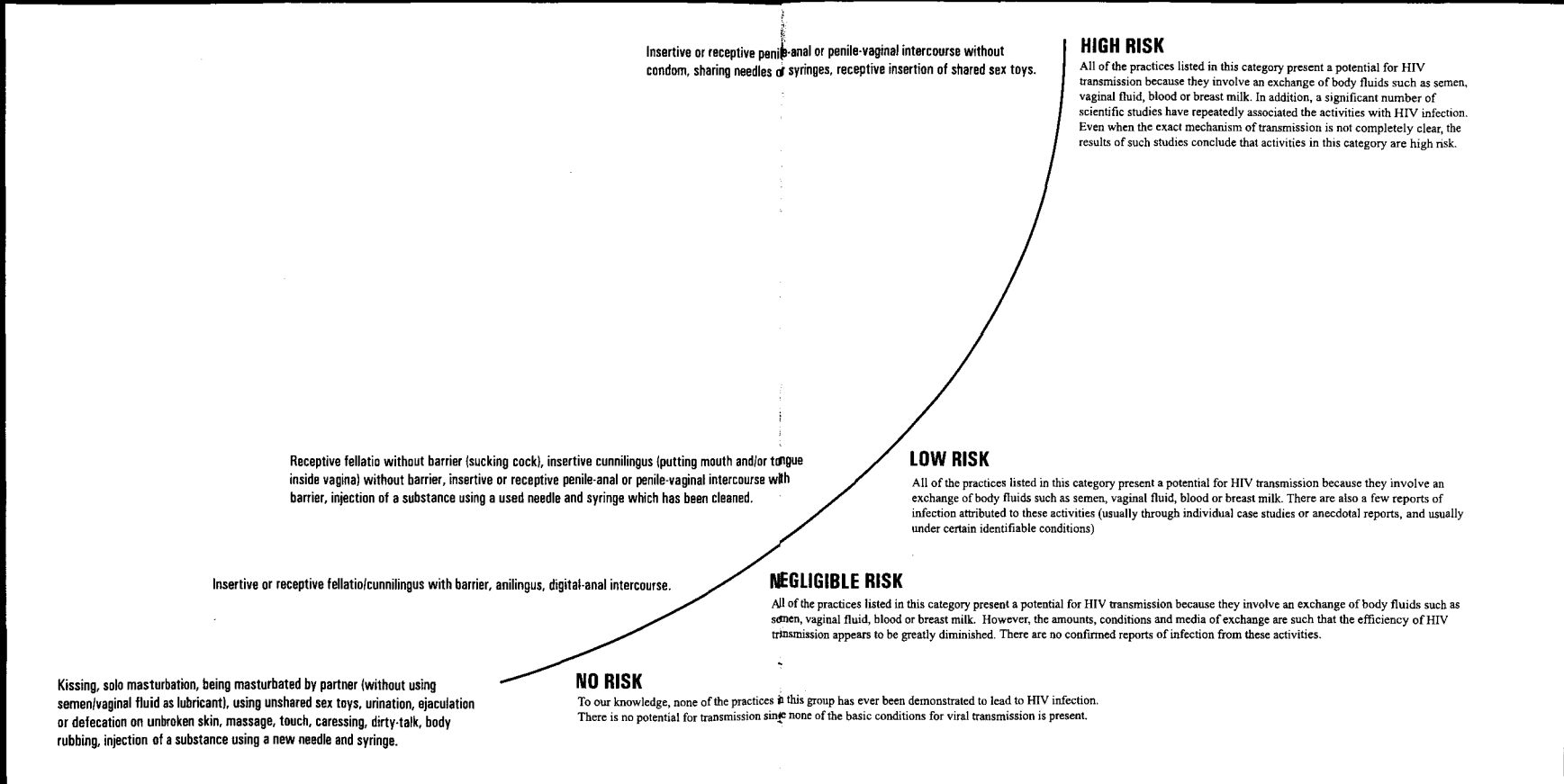
A. Potential for Transmission

In assessing potential for transmission, we consider the principles of transmission as well as laboratory (in vitro) evidence of factors such as the presence and concentration of HIV in different body fluids. Since it is impossible to prove that an infection will never happen, it is important to consider the potential for transmission before weighing it against evidence of what is known to have actually occurred. The potential for transmission is greater in some cases than in others—for instance, the quantity of HIV that is carried in urine makes this body fluid an unlikely source of infection, but there is still a potential for transmission in theory. For the purposes of our model, we consider an activity to carry no risk only when there is no potential for transmission to occur.

B. Evidence of Transmission

For the creation of these guidelines, a review of research was carried out to examine the documented evidence of HIV transmission through specific practices. Case reports, abstracts and research reports have been considered, with the greatest weight being given to reports from cohort studies using multivariate analysis techniques (studying a specific group of individuals over time and analysing the interaction of a number of variables). For the purpose of this model, greater emphasis is placed upon what is known or proven to happen, than upon what may happen in theory.

Risk Model



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To assess the risk of HIV transmission, the potential for transmission and the evidence that transmission has occurred are both considered. Activities are then placed into one of four categories. **(Note, this model is not intended as a guide to risk levels for sexually transmitted diseases (STDs) other than HIV).**

Risk Categories

1. No risk

To our knowledge, none of the practices in this group has ever been demonstrated to lead to HIV infection. There is no potential for transmission since none of the basic conditions for viral transmission is present.

Potential for transmission: None

Evidence of transmission: None

Examples: Kissing, solo masturbation, being masturbated by partner (without using semen/vaginal fluids as lubricant), using unshared sex toys, urination, ejaculation or defecation on unbroken skin, massage, touch, caressing, dirty-talk, body rubbing, injection of a substance using a new needle and syringe.

2. Negligible risk

All of the practices listed in this category present a potential for HIV transmission because they involve an exchange of body fluids such as semen, vaginal fluid, blood or breast milk. However, the amounts, conditions and media of exchange are such that the efficiency of HIV transmission appears to be greatly diminished. There are no confirmed reports of infection from these activities.

The risk here is defined as “negligible” because, although there is a very small potential of transmitting HIV by these practices, it is so small that any reasonable person living an active life would take comparable risks in other areas (such as crossing the street) without thinking twice about it.

Potential for transmission: Yes

Evidence of transmission: None

Examples: Insertive or receptive fellatio/cunnilingus with barrier, anilingus, digital-anal intercourse.

3. Low risk

All of the practices listed in this category present a potential for HIV transmission because they involve an exchange of body fluids such as semen, vaginal fluid, blood or breast milk. There are also a few reports of infection attributed to these activities (usually through individual case studies or anecdotal reports, and usually under certain identifiable conditions)

Potential for transmission: Yes

Evidence of transmission: Yes
(under certain conditions)

Examples: Receptive fellatio without barrier (sucking cock), insertive cunnilingus (putting mouth and/or tongue inside vagina) without barrier, insertive or receptive penile-anal or penile-vaginal intercourse with barrier, injection of a substance using a used needle and syringe which has been cleaned.

4. High risk

All of the practices listed in this category present a potential for HIV transmission because they involve an exchange of body fluids such as semen, vaginal fluid, blood or breast milk. In addition, a significant number of scientific studies have repeatedly associated the activities with HIV infection. Even when the exact mechanism of transmission is not completely clear, the results of such studies conclude that activities in this category are high risk.

Potential for transmission: Yes

Evidence of transmission: Yes

Examples: Insertive or receptive penile-anal or penile-vaginal intercourse without condom, sharing needles or syringes, receptive insertion of shared sex toys.

Section IV

Assessing Risk of HIV Transmission

Part 1 – Sexual Activities

For the purposes of analysis for this model, we consider the risk of a **single episode** of each particular sexual practice. In real life, sexual activity is more complex. It is rarely confined to one episode or to one practice, nor is it always confined to one partner at one time. The order in which people engage in sexual practices also affects risk. If a combination or sequence of sexual activities is deemed to increase risk, these factors are addressed in the text.

Note about Terminology

In this document, sexual activities are often referred to as being “insertive” or “receptive”. These terms are used because there is often a difference in risk for each of the partners, depending on the role they play in the sex act in which they are participating. The terms also avoid labelling activities as “passive” or “active,” which many find to be offensive or simply inaccurate.

For the sake of consistency in this document, putting penises, tongues, fingers and devices into the body defines “insertion.” (To avoid confusion, we will also provide clarifying descriptions of activities in brackets.)

We urge that educators, counsellors and health care providers use language relevant to particular

audiences, such as “the person licking” and “the person being licked.”

A. Kissing

“Sucking face, necking, smooching”

Potential for Transmission

There is no potential for transmission in pressing dry lips together.

There is a very small potential for transmission in wet kissing where blood may be exchanged. Saliva that does not contain blood presents no potential for transmission, as research has shown that an enzyme in saliva inhibits HIV¹³. In general, the mouth and throat are well defended against HIV: the oral mucosal lining contains few cells that are the most susceptible to HIV. In the absence of blood in the mouth, wet kissing can be classified as no risk.

The risk involved in wet kissing is increased when blood is present in the mouth of one or both partners. This could be caused by recent brushing of the teeth, a sore in the mouth, gum disease, recent tooth extraction or biting or scratching one another (with the teeth or, for example, with orthodontic braces) during particularly vigorous kissing. Although it is likely that only a small amount of blood would ever

¹³ Reucroft, S, Swain, J. Saliva thwarts HIV. *New Scientist*, 17 January 1988

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be present in the mouth, the presence of a quantity sufficient for transmission of HIV to occur cannot be discounted. The risk of transmission is increased where blood is exchanged between mouths and where the mouth of the person receiving the blood contains ulcers or sores or where there is evidence of dental recession. Accordingly, kissing in the presence of blood in the mouth cannot be classified as no risk.

Note: It is recommended that a period of approximately 30 minutes be allowed to elapse after brushing or flossing teeth before sexual activity, due to the possibility of blood in saliva.

Evidence of Transmission

There has never been a documented case of HIV transmission through dry kissing. There are a few anecdotal reports of HIV transmission through wet kissing where blood has been exchanged.

Assessment of Risk of HIV Transmission

- **Wet or dry kissing**
(no exchange of blood) No risk

- **Wet kissing**
(with exchange of blood) Low risk

B. Oral Sex: Fellatio

"Giving/getting head, headjob, blowjob, sucking off, blowing, face-fucking, going down, cock-sucking"

Potential for Transmission

In fellatio, there is potential for transmission to the receptive partner (the person sucking or licking the penis) because pre-ejaculatory fluid (pre-cum) or semen can get into the mouth. A healthy mouth is generally a hostile environment for HIV, because an enzyme in saliva has been shown to inhibit HIV.

The risk of transmission to the receptive partner is increased if there is a disruption in the oral mucosa caused by bleeding gums, cuts, sores, lesions, ulcers or burns in the mouth or by a recent tooth extraction. In such instances, the receptive partner can reduce the risk by using a protective barrier, such as a condom.

Speculation that the risk of transmission is increased if ejaculate is swallowed now appears unfounded, since enzymes in the throat and the stomach are known to inhibit HIV. The risk of transmission relates to taking ejaculate or pre-ejaculatory fluid in an unhealthy (or wounded) mouth, not into the digestive system, which is a hostile environment for HIV.

The risk in receptive fellatio can be reduced by avoiding ejaculation of semen in the mouth, and can be reduced further by using a condom, preferably unlubricated. It is also recommended that the receptive partner wait at least thirty minutes after brushing or flossing teeth before engaging in fellatio, since brushing and flossing teeth may cause temporary bleeding of the gums.

In insertive fellatio (being sucked or licked on the penis), there is a theoretical risk because a small quantity of blood (from bleeding gums or sores in the mouth) could come into contact with an abrasion on the head of the penis, and with the mucosal lining of the penile opening. However, the small amount of blood that would be passed under such conditions makes infection very unlikely.

In the absence of some disruption to the oral cavity, the risk involved in either receptive or insertive fellatio can be regarded as quite remote.

Evidence of Transmission

Transmission of HIV is reported to have occurred through receptive fellatio (sucking or licking the penis), although it is only reported to have occurred very rarely, usually in circumstances where there is a portal of entry resulting from a disruption to the oral mucosa (caused by bleeding gums, cuts, sores, lesions, ulcers or burns in the mouth).

Much of the evidence of transmission during fellatio is based on isolated case reports. Several of the earliest epidemiological studies of men who have sex with men failed to show that receptive fellatio carried a significant risk. This might have been because one recognized act of a high-risk activity was considered the most likely route of transmission despite multiple acts of lower risk activities. Some later studies have shown a risk, but a risk much smaller than for other activities, such as penile-anal intercourse.

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Overall, the evidence indicates that transmission through receptive fellatio (sucking or licking the penis) is a relatively rare occurrence, and it is therefore classified as low risk.¹⁴ There have been no documented cases of transmission through insertive fellatio (being licked or sucked).

It must be emphasized that some STDs **other than HIV** may be easily transmitted by fellatio where no barrier is used.

Assessment of Risk of HIV Transmission

Insertive fellatio

(getting sucked on the penis)

- With condom Negligible risk*
- With no condom Negligible risk

Receptive fellatio

(sucking the penis)

- With condom Negligible risk*
- With no condom and without taking semen in the mouth Low risk# (the risk is increased if there is a disruption in the oral mucosa of the receptive partner, caused by bleeding gums, cuts, sores, lesions, ulcers or burns in the mouth or by a recent tooth extraction).
- With no condom and taking semen in the mouth Low risk (the risk is increased if there is a disruption in the oral mucosa of the receptive partner, caused by bleeding gums, cuts, sores, lesions, ulcers or burns in the mouth or by a recent tooth extraction).

**Condoms are not 100% reliable. There is enough evidence of condom breakage or improper use to classify this activity as negligible (rather than no) risk.*

#Pre-ejaculatory fluid (pre-cum) may still be taken in the mouth.

C. Oral Sex: Cunnilingus

"Licking out, eating out, going down, licking pussy"

Potential for Transmission

There is a potential for transmission of HIV by insertive cunnilingus (licking the clitoris and/or in or around the vagina) because vaginal fluid and blood can get in the mouth. However, the mouth generally is a hostile environment for HIV, because an enzyme in saliva has been shown to inhibit HIV.

The potential for transmission to the insertive partner is increased if there is a disruption in the oral mucosa caused by bleeding gums, cuts, sores, lesions, ulcers or burns in the mouth or by a recent tooth extraction. The risk in insertive cunnilingus is also higher during menstruation, because of the presence of menstrual blood. The risk can be reduced by using a latex barrier over the vaginal opening, such as a dental dam or, as an alternative, a new, unlubricated condom carefully cut open. It is also recommended that the insertive partner wait at least thirty minutes after brushing or flossing teeth before engaging in cunnilingus, since brushing and flossing teeth may cause temporary bleeding of the gums.

Receptive cunnilingus (being licked on the clitoris and/or in or around the vagina) involves a small potential for transmission because of the possibility of abrasions in the vagina, which could permit entry of small quantities of blood (from bleeding gums or a sore in the mouth). The small amount of blood likely to be involved in such contact make this a remote possibility.

Evidence of Transmission

There are no well-designed studies offering evidence of transmission through cunnilingus. However, the extremely small number of case reports in which transmission has been attributed to insertive cunnilingus (licking the clitoris and/or in or around the vagina) supports the classification of this activity as low risk.

¹⁴ Grulich, A. et al. *Risk Factors for HIV infection in homosexual men in Sydney, Australia.* 12th World AIDS Conference Abstract 23124, 1998.

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There have been no documented cases of transmission through receptive cunnilingus (being licked).

Assessment of Risk of HIV Transmission

Insertive cunnilingus

(licking/sucking the clitoris and/or in or around vagina)

- With barrier Negligible risk*
- With no barrier and outside menses Low risk
- With no barrier and during menses Low risk

Receptive cunnilingus

(getting clitoris and/or in or around vagina sucked/licked)

- With barrier Negligible risk*
- With no barrier Negligible risk

** There is enough evidence of breakage or improper use of barrier methods to classify this activity as negligible (rather than no) risk.*

D. Oral Sex: Anilingus

"Rimming, licking out, eating out, licking/eating ass"

Potential for Transmission

Anilingus is not an efficient means of HIV transmission. Although there may be a potential for transmission by insertive anilingus (licking the anus) if blood is present in fecal matter in the anus, the quantity of blood is likely to be extremely small. There is a potential for HIV transmission by receptive anilingus (being licked) because of the possibility of contact between blood in the mouth and the rectal lining, but the small amount of blood likely to be involved again makes such an occurrence highly unlikely.

It should be noted, however, that anilingus is an efficient route of transmission for other sexually transmitted diseases such as syphilis, gonorrhea, hepatitis A and B and intestinal parasites (including cryptosporidium). As explained in Section VI, untreated STDs can increase a person's susceptibility

to HIV infection. STDs are also of particular concern to people living with HIV, since they may affect the immune system and contribute to the progression of HIV disease.

Any risk from anilingus can be reduced by use of a latex barrier, such as a dental dam or a new, unlubricated condom carefully cut open.

Evidence of Transmission

There have been no documented cases of HIV transmission through receptive or insertive anilingus.

Assessment of Risk of HIV Transmission

Insertive anilingus

(licking the anus)

- With barrier Negligible risk*
- Without barrier Negligible risk

Receptive anilingus

(being licked)

- With barrier Negligible risk*
- Without barrier Negligible risk

**There is enough evidence of breakage or improper use of barrier methods to classify this activity as negligible (rather than no) risk.*

E. Intercourse: Penile-Vaginal

"Fucking, screwing, making love, getting/being laid"

Potential for Transmission

The earliest safer sex advice rightly categorized penile-vaginal intercourse as "high risk." All of the conditions for efficient viral transmission are in place during this activity.

Penile-vaginal intercourse is a high-risk activity. The majority of documented cases of HIV transmission throughout the world are the result of unprotected penile-vaginal intercourse. The risk of transmission can be reduced through the proper use of condoms with lubricant.

While insertive penile-vaginal intercourse without a barrier is a high risk activity, women should be aware that as the receptive partners, they are at even greater

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risk. Receptive penile-vaginal intercourse is one of the most efficient means of HIV transmission.

It is not absolutely clear how transmission to the insertive partner (that is, from women to men) occurs during penile-vaginal intercourse. Early explanations were that minor, or even microscopic, cuts or tears on the penis allowed entry of the virus. A later explanation was that a sore on the penis, such as a genital ulcer, can pose a risk by providing a point of entry for the virus. There is now evidence that transmission can occur directly through the mucosal lining of the urethra (through the opening at the tip of the penis). Even without knowing exactly how transmission occurs, there has been enough evidence to show that it happens frequently enough for unprotected insertive penile-vaginal intercourse to be classified as a high-risk activity.

Recent evidence suggests that uncircumcised men may be at higher risk of HIV transmission as the insertive partner in penile-vaginal or penile-anal intercourse (see Section VI)

Another widespread misconception is that the risk for the receptive partner will be reduced if unprotected penile-vaginal intercourse is stopped before ejaculation occurs (sometimes called “coitus interruptus”). This action carries a significant potential for transmission, given the efficiency of transmission through penile-vaginal intercourse and the impossibility of determining how much pre-ejaculatory fluid may be deposited in the vagina. Interrupted penile-vaginal intercourse without a condom, therefore, is still high risk.

Evidence of Transmission

There is ample documented evidence of HIV transmission through unprotected insertive and receptive penile-vaginal intercourse.

The proper use of the male condom or the female condom has been shown to greatly reduce incidence of HIV transmission during vaginal intercourse. There is evidence of transmission due to condom failure, however, so receptive penile-vaginal intercourse with a condom is considered to be low

risk. In order to reduce potential trauma to the vagina of the receptive partner, it is important to always use plenty of lubricant, especially if, for some reason, a condom cannot be used.

Some evidence shows that there is a higher risk of transmission during unprotected insertive penile-vaginal intercourse when the receptive partner is menstruating. However, there is sufficient evidence of infection outside menses to prevent any useful distinction in risk based upon absence of menstrual blood.

Assessment of Risk of HIV Transmission

Insertive penile-vaginal intercourse

- With properly-used condom Low risk*
- Without condom High risk

Receptive penile-vaginal intercourse

- With properly-used condom Low risk*
- Without condom High risk

*Condoms are not 100 percent reliable. There is enough evidence of transmission due to condom breakage or improper use to classify this activity as low (rather than negligible) risk.

F. Intercourse: Penile-Anal

“(Butt)(Bum)(Ass)Fucking, screwing, making love, getting/being laid”

Potential for Transmission

The earliest safer sex advice rightly classified penile-anal intercourse as high risk. All of the conditions for efficient viral transmission are in place during this activity.

Penile-anal intercourse is a high-risk activity. The risk can be reduced through the proper use of condoms with lubricant. In case the condom was to break, the risk is reduced further still if the insertive partner pulls out before ejaculation.

Any notion that the insertive partner in penile-anal intercourse has a low risk of infection is untrue. Although more cases of transmission have been attributed to receptive penile-anal intercourse, the number of infections among insertive partners is

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significant enough to make this a high-risk activity. From the perspective of public health education strategies, and particularly from the perspective of individuals engaging in sex, being the insertive partner offers no reliable protection. This mistaken belief that the insertive partner is at *low* risk has fostered a false sense of security among some men, has made it more difficult for receptive partners (whether male or female) to insist that precautions be used, and has resulted in more cases of HIV infection.

It is not absolutely clear how transmission occurs from the receptive to the insertive partner during anal intercourse. Early explanations were that minor, or even microscopic, cuts or tears on the penis allowed entry of the virus. A later explanation was that a sore on the penis, such as a genital ulcer, can pose a risk by providing a point of entry for the virus. There is now evidence that transmission can occur directly through the mucosal lining of the urethra (through the opening at the tip of the penis). Even without knowing how transmission occurs in any given case, there is enough evidence to show that it happens frequently enough for insertive penile-anal intercourse to be classified as a high risk activity.

Recent evidence suggests that uncircumcised men may be at higher risk of HIV transmission as the insertive partner in penile-anal or penile-vaginal intercourse (see Section VI).

Another widespread misconception is that risk for the receptive partner is effectively reduced if unprotected anal intercourse is stopped before ejaculation occurs. This action carries a high risk, however, given the efficiency of transmission through penile-anal intercourse and the impossibility of determining how much pre-ejaculatory fluid has been deposited in the rectum. Interrupted penile-anal intercourse without a condom is still high risk.

Evidence of Transmission

There is ample documented evidence of HIV transmission through unprotected insertive and receptive penile-anal intercourse.

The proper use of condoms with lubricant has been shown to greatly reduce incidence of transmission during anal intercourse. There is evidence of transmission due to condom failure, however, so receptive penile-anal intercourse with a condom is considered to be low risk.

Female condoms have not been studied specifically for use in anal intercourse, nor have they been designed or approved for that purpose. However, anecdotal evidence suggests that they may provide another alternative for reducing risk of HIV transmission from penile-anal intercourse.

Assessment of Risk of HIV Transmission

Insertive penile-anal intercourse

- With properly used condom Low risk*
- Without condom High risk

Receptive penile-anal intercourse

- With properly-used condom Low risk*
- Without condom High risk

*Condoms are not 100 percent reliable. There is enough evidence of transmission due to condom breakage or improper use to classify this activity as low (rather than negligible) risk.

G. Digital-Anal and Digital-Vaginal Intercourse

"Fingering, finger job, finger-fucking"

Potential for Transmission

The practice of fingering the clitoris, labia, vagina or anus carries no risk for the receptive partner (person being fingered) unless the inserted finger has an open cut, sore, lesion, burn or rash. There is, however, the possibility that the vaginal or rectal lining can suffer trauma—fingernails can easily tear these membranes. This would increase the potential for transmission through other, higher-risk activities that may follow, such as unprotected penile intercourse. Masturbating oneself and then fingering one's partner may insert semen or vaginal fluid and increase the potential for transmission.

For the insertive partner (person doing the fingering), the primary risk comes from contact with small amounts of blood or vaginal fluid that could find a route of entry in a finger cut or hangnail.

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The risk can be reduced by using a latex glove, which performs a similar function to a condom during penile intercourse. A gloved finger might still cause some stress to the mucosal linings of the receptive partner, which could increase the risk to the receptive partner from other high risk activities.

Evidence of Transmission

There are no documented cases of HIV transmission through insertive or receptive digital-vaginal or digital-anal intercourse.

Assessment of Risk of HIV Transmission

Insertive digital-vaginal intercourse

(fingering someone's vagina)

- With latex glove Negligible risk*
- Without latex glove Negligible risk

Insertive digital-anal intercourse

(fingering someone's anus)

- With latex glove Negligible risk*
- Without latex glove Negligible risk

Receptive digital-vaginal intercourse

(having the vagina fingered by someone)

- With latex glove Negligible risk*
- Without latex glove Negligible risk

Receptive digital-anal intercourse

(having the anus fingered by someone)

- With latex glove Negligible risk*
- Without latex glove Negligible risk

**The latex glove could be defective or improperly used, making it impossible to classify these activities as no risk. However, using a glove will reduce risk, particularly if open cuts, sores, lesions, burns or rashes are present.*

H. Manual Anal and Manual-Vaginal Intercourse

"Fisting"

Potential for Transmission

The practice of inserting the hand into the rectum or vagina ("fisting") is not by itself an efficient means of HIV transmission. However, studies indicate that receptive manual intercourse is linked closely with

HIV infection. This is due to the extensive trauma that fisting may cause to the anal or vaginal canal that if followed by unprotected penile intercourse or the insertion of shared sex toys produces a very favourable environment for HIV transmission. This is true for a certain period of time, even after a single episode, as the trauma to the mucosal lining may last for several weeks after the event. Masturbating oneself and then fisting one's partner may insert semen or vaginal fluid and increase the risk of transmission. For this reason, the risk is greater for the receptive partner. The insertive partner may have cuts or abrasions (including hangnails) which may be exposed to blood or vaginal fluid during fisting. This risk can be reduced by using a latex glove.

Evidence of Transmission

Several studies have identified fisting as a co-factor in HIV transmission, suggesting that other higher-risk activities often precede or follow this activity. However, there is no evidence that fisting alone has resulted in HIV transmission.

Assessment of Risk of HIV Transmission

Insertive manual-anal and manual-vaginal intercourse (fisting)

- With glove Negligible risk*
- Without glove Negligible risk

Receptive manual-anal and manual-vaginal intercourse (getting fisted)

- With glove Negligible risk*
- Without glove Negligible risk

**The latex glove could be defective or improperly used, making it impossible to classify these activities as no risk. However, using a glove will reduce risk, particularly if open cuts, sores, lesions, burns or rashes are present.*

I. Masturbation by Partner

"Jerking/jacking off, J/O, giving/getting a handjob, getting someone off, making someone cum"

Potential for Transmission

The practice of masturbating a man through manual stimulation of the erect penis, or of masturbating a

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Assessment of Risk of HIV Transmission

Using Insertive Sex Toys

- Receptive, shared High risk
- Receptive, unshared No risk*
- Receptive, cleaned
 before sharing Negligible risk#

**As noted above, this activity may cause trauma to the vaginal or rectal lining, making it easier for HIV transmission to occur later with unprotected penile intercourse.*

#There is a possibility that the toy may not be cleaned properly.

K. Sadoomasochistic Activities

"S/M, S & M"

Potential for Transmission

Many sadoomasochistic activities pose no risk of HIV transmission. These include the use of whips, chains, clamps, masks, weights, gags, ties and other restraints and non-insertive devices.

As with other sex acts, the general principles of HIV transmission apply—infection can occur when infected semen, vaginal fluid or blood comes into contact with a receptive site: the mucosal lining of the rectum or vagina, or a route of entry to the blood system via an open cut, sore, lesion, ulcer, burn or rash.

Some S/M activities may lead to the incidental or intentional drawing of blood (for example, whips, nipple-clamps, restraints, severe spanking, tattooing and skin piercing). When any S/M activity involves the potential drawing of blood, sterile precautions, similar to those set in hospitals, should be taken.¹⁵ Anything used to draw blood should not be used on more than one person without disinfecting it (see J, Using Insertive Sex Toys).

Risk for S/M activities can be reduced by ensuring that any toys, devices or other skin-penetrating gear remain unshared to ensure they do not come into contact with someone else's blood, semen or vaginal fluid through the mouth, vagina, rectum, penis or eyes or are carefully cleaned before sharing. Any open

cuts, sores, lesions, ulcers, burns or rashes should also be protected from exposure to semen, vaginal fluid or blood. Risk can be reduced further by completely avoiding getting blood on the other partner's skin. Any body part, device or item (such as a latex glove) that has blood on it should not come into contact with someone else's vagina, rectum, penis or eyes, or with an open cut, sore, lesion, ulcer, burn or rash (in the mouth or on the body).

Even when S/M activities are very rough, if they do not draw blood that comes into contact with someone else and are not followed by any other sexual activities that involve contact with semen, blood or vaginal fluid, then they are not a risk for HIV transmission.

Evidence of Transmission

No studies have ever examined HIV transmission by means of various S/M activities.

Assessment of Risk of HIV Transmission

Sadoomasochistic activities	No risk (provided universal precautions are followed)
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L. Contact with Feces

"Scat, shit play, brown"

Potential for Transmission

There have been no reports of isolation of HIV from feces, but blood can occasionally be present. This means that there is a small potential for HIV transmission through receptive defecation where the feces come into contact with mucosa or with open cuts, sores, lesions, ulcers, burns or rashes. Defecation on unbroken skin does not pose a risk.

Evidence of Transmission

There is no evidence that transmission of HIV has occurred from contact with feces. However, there is a high risk of transmitting other STDs, such as hepatitis and intestinal parasites that can increase susceptibility to HIV infection or hasten progression of illness in people living with HIV.

¹⁵ Ottawa : Health Canada. *Preventing the transmission of bloodborne pathogens in health care and public services settings*. May 1997.

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Assessment of Risk of HIV Transmission

- **External defecation**
(On unbroken skin) No risk
- **Oral/mucosal contact with feces** Negligible risk*

**Due to the potential presence of blood in the feces entering an open cut, sore, lesion, burn, ulcer or bleeding gums in the mouth.*

M. Urination

"Watersports, golden showers, pissing, yellow"

Potential for Transmission

Urine is not an efficient medium for viral growth and contains few of the lymphocytes that host HIV. External urination on unbroken skin poses no possibility of transmission. Ingesting or otherwise allowing urine inside the body involves a small potential for HIV transmission. Ingesting urine poses the possibility of infection by other organisms, of particular concern for people living with HIV.

Evidence of Transmission

There is no evidence that transmission of HIV has occurred through contact with urine.

Assessment of Risk of HIV Transmission

- **Urination on body** No risk
- **Urination into body** Negligible risk*

**Due to the possible presence of blood in the urine entering an open cut, sore, lesion, burn or bleeding gums in the mouth.*

N. Other Sexual Activities

a. Vagina-Vagina Rubbing

Potential for Transmission

Vagina to vagina rubbing poses the potential for transmission because there is a possibility that vaginal fluid may be exchanged between partners. During menstruation, the risk is increased by the potential exchange of blood.

Evidence of Transmission

There is no evidence of transmission of HIV by vagina to vagina rubbing. The very few reported cases

of female-to-female sexual transmission of HIV have most likely been the result either of mouth-vagina contact or sharing of sex toys.

Assessment of Risk of HIV Transmission

Vagina-to-vagina rubbing

Negligible risk under this model, as there have been no studies to demonstrate transmission. However, because contact between vaginal and/or menstrual fluid is likely, there may be increased risk.

b. Docking

Potential for Transmission

"Docking" involves placing the uncircumcised foreskin of one partner over the penis of another partner followed by masturbation of both penises simultaneously. There is the potential for transmission by the entry of semen into the urethra, especially if the foreskin is sealed tight enough to prevent the escape of semen. There is also a possibility that pre-cum or semen will be retained under the foreskin of the uncircumcised partner(s), resulting in a risk of transmission into or through its mucosa.

Evidence of Transmission

No documented cases of HIV infection have been attributed to docking.

Assessment of Risk of HIV Transmission

Docking

Negligible risk under this model, as there have been no studies to demonstrate transmission. However, because contact between semen and/or pre-cum is likely, there may be increased risk. Furthermore, uncircumcised men are known to be at increased risk of HIV transmission (see Section VI).

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c. Breast-Milk

Potential for Transmission

The ingestion of breast-milk may occur during sexual activity. There is a potential for transmission because HIV has been isolated in breast milk in sufficient quantities to enable transmission to occur. The potential is increased if there are bleeding gums, cuts, sores, ulcers, lesions or burns in the mouth.

Evidence of Transmission

There are no documented cases of HIV transmission from taking breast milk in the mouth during sexual activity.

Assessment of Risk of HIV Transmission

Ingesting breast milk Negligible risk

Part 2 – Injecting and Piercing Activities

A. Injection Drug Use¹⁶

“Shooting up, hitting up, jacking up, mainlining”

Potential for Transmission

The sharing of needles or syringes involves a very high potential for transmission of HIV due to the presence of blood in the shaft of the used needle and in the tube of the used syringe. Whether it is visible or not, blood will almost certainly be present in a used needle or syringe in sufficient quantities for transmission to occur. Infective HIV may remain present in the blood in a used needle or syringe for up to 24 hours.¹⁷ Sharing needles and syringes can also transmit other blood-borne viruses, such as Hepatitis B and C. These are of particular concern to people living with HIV.

Evidence of Transmission


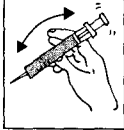


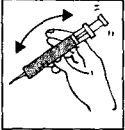


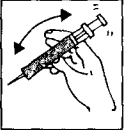

It is well established that the sharing of needles and syringes poses a high risk of transmission of HIV and other blood-borne viruses. To reduce the risk, a new needle and syringe should be used every time. If sharing a needle or syringe is absolutely unavoidable,

¹⁶ Injection drug use may involve either illicit (“street”) drugs such as cocaine and heroin, prescription drugs such as insulin or anabolic steroids, or vitamin supplements such as intramuscular vitamin B12.

¹⁷ Masters, B. et al. Recovery of HIV from syringes. 12th World AIDS Conference Abstract 23222, 1998.

Needle cleaning

Try not to share needles (“fits”). If you do share, always clean the needle and syringe with bleach and water. Here’s how.

<p>Water rinse x1</p> <p>Fill the syringe completely with sterile water. (Soapy water if you can.) Shake. Squirt out. Do not reuse this water.</p>  <p style="text-align: center;">FILL</p>  <p style="text-align: center;">SHAKE</p>  <p style="text-align: center;">EMPTY DISCARD WATER BOTTLE</p>	<p>Bleach x2</p> <p>Fill the syringe completely with full strength bleach. Leave for at least 30 seconds. Shake. Squirt out. Do it again.</p>  <p style="text-align: center;">FILL</p>  <p style="text-align: center;">SHAKE</p>  <p style="text-align: center;">EMPTY</p>	<p>Water rinse x2</p> <p>Fill the syringe completely with sterilized water. Shake. Squirt out. (not back into the container). Do it again.</p>  <p style="text-align: center;">FILL</p>  <p style="text-align: center;">SHAKE</p>  <p style="text-align: center;">EMPTY</p>
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Clean cooker including spoons with bleach and water. Use a new filter every time. You can get bleach and water from any needle exchange site.

it is essential that it be cleaned using bleach and water. Any brand of household bleach will do, although the most concentrated bleach (5% or more) is best. It is preferable to use sterile water (available from needle exchanges) or, if sterile water is not available, water which has been recently boiled. Ideally, the following steps should be followed:

- The syringe should be filled completely with clean water, then shaken vigorously. The water should then be squirted out.
- The syringe should then be filled completely with full strength (undiluted) bleach, left for at least 30 seconds then shaken vigorously. The bleach is then squirted out. **This should be done at least twice**, using fresh bleach each time.

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- The bleach is rinsed from the syringe by repeating Step 1 **at least twice**, using clean water each time.

It is very important to note that there are serious doubts whether this cleaning method is adequate for the purpose of killing the Hepatitis C virus. **To completely avoid the risk of infection with Hepatitis C, needles should never be shared.** All needles should be capped and disposed of as soon as possible after use. A needle should never be re-capped by anyone other than the person who used it. It is also important not to share vials or spoons of liquid, because blood from one person's needle can get into the liquid and be drawn into someone else's needle. Even where injection drug use does not involve shared needles or syringes there are a number of infections other than HIV which may be acquired by injecting drugs. These include skin abscesses and infections at the site of injection, blood clots, heart infections and bacterial pneumonia. Avoiding these illnesses is particularly important for people living with HIV/AIDS.

Spoons should always be sterilised with an alcohol swab or with bleach and water before each use. Drugs should be mixed using sterile water or if this is not available, water which has been recently boiled. To remove any impurities from the mix, it is best to fill the syringe by drawing the liquid through a cotton filter (or a piece torn from an alcohol swab). Before shooting up, the injection site should always be cleaned with a sterile alcohol swab, or if this is not available, rubbing alcohol, aftershave lotion (which contains alcohol) or soap and water.

Assessment of Risk of HIV Transmission

- **Injection using new needle and syringe and unshared mixing equipment** No risk
- **Injection using shared, uncleaned needle and/or syringe and/or mixing equipment** High risk

- **Injection using shared, cleaned needle and/or syringe and/or mixing equipment** Low risk*

**There is evidence of transmission due to improperly cleaned needles and/or syringes.*

B. Tattooing, Piercing, Electrolysis and Acupuncture

All tattooing, piercing, electrolysis and acupuncture practitioners should follow universal precautions similar to those used in hospitals¹⁸. It is preferable that all needles used in such procedures be used once only and disposed of after use. Appropriate queries should be made about the precautions observed in any particular clinic or studio prior to such procedures being performed.

Part 3 - Maternal Transmission

Note: because of the complexity of issues relating to maternal transmission, no category indicating the assessment of risk of transmission is assigned in this section. The statistical probabilities are taken from recent scientific studies.

A. Vertical Transmission

A woman's choice to have a child when she is HIV-positive is a complex and emotional one. Studies have shown that if no anti-HIV treatments are taken during pregnancy, there is a 27 per cent chance of HIV transmission from the mother to the fetus. This is often referred to as "vertical transmission". Recent studies also suggest that a number of other factors are associated with vertical transmission of HIV, including maternal viral load, clinical stage of disease, nutritional status, low infant birth weight, cigarette smoking during pregnancy and intrapartum (during birth) factors such as prolonged rupture of membranes that may expose the fetus to maternal fluids.

In recent years it has been shown that the risk of vertical transmission to the child is reduced to 7 percent by treatment with the anti-HIV drug

¹⁸ Ottawa : Health Canada. *Preventing the transmission of bloodborne pathogens in health care and public services settings.* May 1997

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Zidovudine (AZT), both orally during the second and third trimesters of pregnancy, intravenously during labour, and to the baby just after birth.¹⁹ Combination antiretroviral therapy may reduce this risk even further, although studies examining this have not yet been completed. Delivery via caesarian section may also decrease the risk of maternal HIV transmission.²⁰

small potential for transmission, which cannot realistically be assigned a risk category under this model. However, to reduce this small risk even further, new, more sensitive screening tests are being developed.

A woman's right to reproduce is not diminished, nor should it be discouraged, simply because she is HIV-positive. Women living with HIV who are pregnant, or who are considering pregnancy, should be encouraged to discuss their situation with an obstetrician or reproductive health specialist who is experienced in the issues surrounding maternal transmission of HIV.

B. Breast-feeding

HIV is present in the breast-milk of lactating HIV-positive women. Infants may be at risk of HIV infection through breast-feeding, as the mucosal immunity in their mouths is not fully developed. In North America, it is recommended that HIV-positive mothers do not breast-feed infants. This is not always the recommendation in developing countries, where breast milk may be the only available source of nutrients necessary for the child's development and where breast milk provides the only means of protecting the infant with antibodies against other potentially life-threatening infections.

Part 4 - Artificial Insemination and Blood Transfusion

In Canada, all donated blood and semen are now screened for HIV-antibodies. However, due to the possibility that blood or semen may have been donated in the 4-6 week window period prior to the donor developing HIV-antibodies, there is a very

¹⁹ Connor EM, Sperling RS, Gelber R, Kiselev P, Scott G, O'Sullivan MJ, et al. *Reduction of maternal infant transmission of HIV-1 with zidovudine treatment.* New England Journal of Medicine. 331:1173-80, 1994.

²⁰ Read, J. *Mode of delivery and vertical transmission of HIV-1: A meta-analysis from fifteen prospective cohort studies (The International Perinatal HIV Group).* 12th World AIDS Conference Abstract 23275, 1998.

Section V

Increasing and Reducing Risk: Barrier Methods

Condoms

Latex or polyurethane condoms are an effective barrier and one of the most important tools in preventing HIV transmission. Female (internal) condoms are now also available.

Condom Quality Control

In Canada, condoms, as contraceptive devices, are classified as medical devices, and are subject to regulatory control under the Food and Drugs Act and Medical Devices Regulations. These Regulations, administered by the Health Protection Branch of Health Canada, outline standards and conditions of sale with which condom manufacturers and importers must comply. The Regulations apply to all types of condoms available for distribution and sale in Canada including those sold through vending machines and by mail order.

Some requirements apply to all condoms, regardless of their material of manufacture. For example, all condoms must be properly packaged and labelled, and all manufacturers must notify the Branch of the sale of condoms. Other regulatory controls are specific to the different kinds of condoms, depending on what they are made of.

A. Latex condoms

Latex condoms must meet design, length and width requirements as well as specific tests for water leakage, bursting volume and bursting pressure described in the Regulations. The Health Protection Branch maintains a national program of sampling and analysis to monitor latex condoms sold in Canada to ensure that they comply with these requirements. Periodically, one lot from each brand of latex condoms available on the Canadian market is sampled and tested. Unsatisfactory lots are removed from retail sale and follow-up testing is performed to ensure product efficacy. Imported condoms must be accompanied by documentation demonstrating they meet Canada's standard.

Health Canada does not have the resources to inspect all condoms distributed in the country. There is no visible way for the public to know that Health Canada has spot-tested any particular product. However, complaints or concerns about a particular product can be reported to the Medical Devices Hotline at 1-800-267-9675. The Medical Devices Bureau is also able to provide further information about Canada's condom standards and test results from its periodic compliance surveys.

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B. Lambskin condoms

Natural membrane condoms, because of their different material characteristics, are not required to meet the above requirements for latex condoms. Lambskin condoms used alone are not considered effective in the prevention of HIV, because the virus is easily able to pass through the membrane.

C. Synthetic condoms

Condoms made from synthetic materials (such as the polyurethane female condom) cannot be sold until data concerning their safety and effectiveness is first reviewed by the Health Protection Branch. The manufacturer must demonstrate that the condoms provide an effective barrier to micro-organisms and sperm, and must have acceptable test methods so that the quality of the condom sold on the market can be monitored. Only after receiving written approval from the Branch may the manufacturer begin sale of the product in Canada.

At the time these guidelines were produced, Health Canada was conducting a review of its regulations relating to all medical devices, including condoms. To obtain current information about the regulations, call the Medical Devices Hotline on 1-800-267-9675.

Condom Usage

A. The Male Condom

Condoms require getting used to. Men who are first-time condom users should practice using them by themselves before they use one with a partner. To ensure that their male partners are using condoms properly and to be more comfortable about sharing actively in making condoms a regular part of intercourse, women can also practice by putting the condom on a penis substitute.

If condoms are used properly, they have been shown to substantially reduce risk. However,

condoms may sometimes fail, usually because they are not used properly and consistently. Because of evidence of HIV transmission due to broken or improperly used condoms, vaginal and anal intercourse with a condom are deemed to be low, as opposed to negligible, risk.

The key to reducing risk is proper condom use. Therefore, it is important to follow these guidelines:

Buying and storing:

Until recently, only latex and lambskin membrane condoms have been available. Lambskin membrane condoms are not effective because they can allow passage of HIV. (However, people who have an allergy to latex can “double-bag.” They can use a lambskin membrane condom with a latex condom placed over it if the allergic person is the insertive partner, or placed under it if the allergic person is the receptive partner.)

Non-latex condoms made from polyurethane have also been developed. As “new medical devices”, non-latex condoms must be approved by the Health Protection Branch of Health Canada before they can be marketed. Polyurethane has been shown to be an effective barrier against HIV and is stronger but more expensive than latex.

There is some evidence that condoms break or slip more frequently when used in anal sex, although this may be due to higher levels of improper use. Thicker latex condoms have been designed for use specifically in anal sex, however to date there is little available evidence to suggest that they are more effective than regular condoms.

When using condoms, use these guidelines:

- Always use before the expiry date on the package. If in doubt, get a fresh supply.
- Make sure that condoms are stored in a cool, dry place. Exposure to heat or direct sunlight can

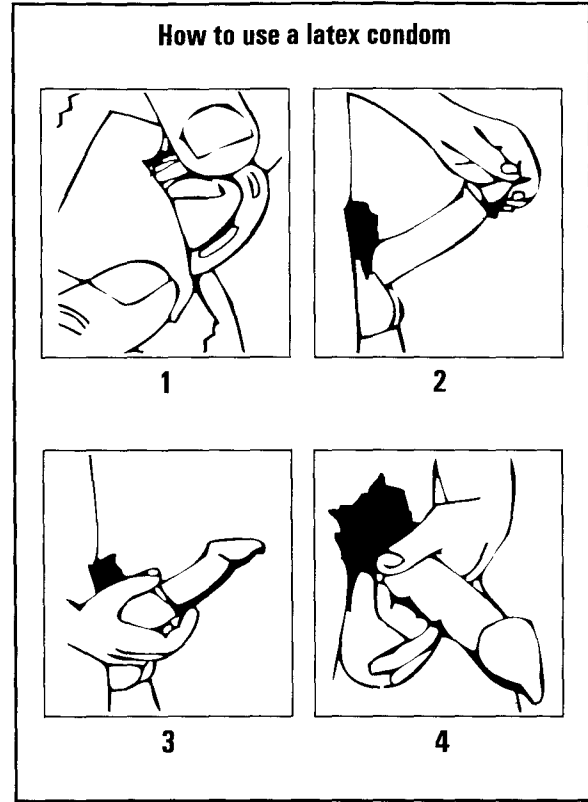
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break down latex. Polyurethane condoms however, are not affected by heat or light and may be stored for up to 5 years. Make sure you know what the condom is made of before using it.

- There are many different brands of condoms and preferences are personal. Try several brands to find the most comfortable.

Before intercourse:

- Only use each condom once.
- Make sure the penis is erect before putting on the condom.
- Put a condom on the erect penis before it has any contact with the vagina or anus.
- Always use a water-based lubricant. Oil-based lubricants (petroleum jelly, Vaseline, Crisco, shortening or lard, mineral oil, massage oils, body lotions, cooking oils) quickly weaken latex condoms. Although some condoms are pre-lubricated, additional lubrication will reduce the chance of condom tearing.
- Take care not to damage or tear the condom with any object, such as a fingernail or ring. It is better to tear the wrapper open with your fingers rather than with your teeth.
- Put a drop of lubricant in the tip of the condom to improve sensation.
- Ensure that no body fluid, such as pre-cum, gets on the outside of the condom that comes into contact with the partner.
- If the insertive partner is not circumcised, pull back the foreskin before putting on the condom or hold the foreskin over the end of the penis.
- Check that you are not rolling the condom on inside out. If you find that the condom has been applied inside out, throw it out and start again with a new one.
- Before placing the condom on an erect penis and as it is being rolled down the penis, squeeze air out of the tip.
- Roll the condom all the way to the base of the penis and smooth out any air bubbles.



During intercourse:

- Check the condom from time to time during intercourse, to make sure it hasn't slipped off or down the penis.
- Stop intercourse shortly after ejaculation, to reduce the chance of the condom slipping off the penis.
- To make sure the condom does not slip off, pull out while the penis is still erect and hold on to the base of the condom when pulling out.
- Stopping intercourse before ejaculation occurs can further reduce the risk of HIV transmission (in case of condom breakage or misuse).

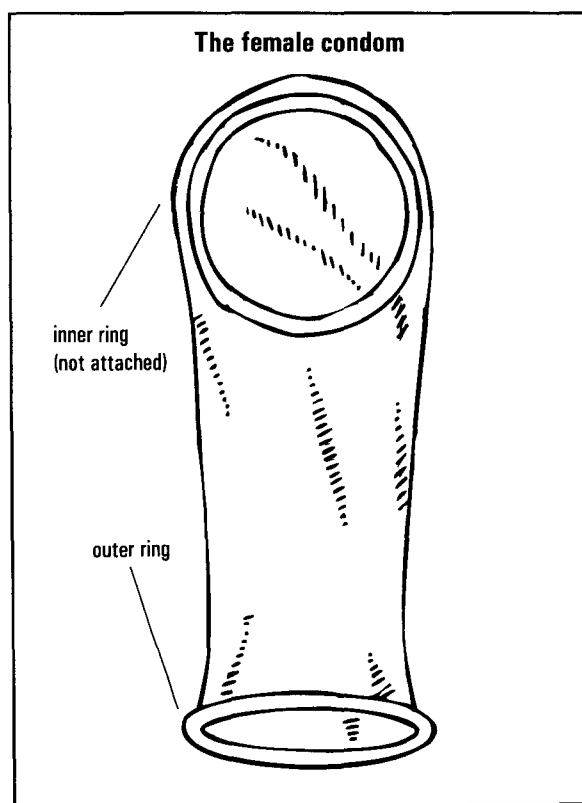
B. The Female Condom

The female condom is now approved and available for sale in Canada (although availability may vary depending on the store). Laboratory studies have

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shown that polyurethane, the material used in the manufacture of the female condom, does not permit the transmission of HIV. The female condom is the first generation of HIV-specific vaginal barrier methods. It is a sheath that lines the vagina, with two flexible plastic rings at either end. The closed end is inserted in the vagina and the open end hangs outside the body against the outer lips of the vagina. The condom comes with a water-based lubricant to make insertion easier and to allow comfortable movement during sex. It may be inserted into the vagina up to 8 hours before sex.

Testing of the female condom indicates that semen leakage after sex is less frequent than with a male condom, and that the risk of semen getting into the vagina due to dislodgment is one third lower. Other tests have investigated the female condom's risk of causing irritation or encouraging bacteria and other health problems in the vagina. In some tests, female condoms were used in sex and then left in the vagina



overnight (a much longer period than normal). The results showed no complications, indicating that even women with very sensitive skin can use the female condom. Studies have also been conducted to ascertain how women and their partners feel about the female condom. While many women and their partners find it acceptable, some people are concerned that the part of the condom which stays outside the vagina is aesthetically unappealing, while other women have reported discomfort with the rings. These problems have tended to be reduced as people become more familiar with the device.²¹

Unlike latex condoms, polyurethane does not break down when exposed to heat and light, so the female condom may be stored for up to 5 years. However, because polyurethane is more expensive than latex, the female condom is considerably more expensive than the latex male condom.

The female condom offers the welcome potential of giving women the chance of more control over their own protection. Like the male condom, proper use is crucial to its effectiveness. The following guidelines are recommended:

- Insert the condom into the vagina 8 hours or less prior to intercourse
- Use additional water-based lubricant, if necessary
- Use each female condom only once, with only one partner
- Squeeze the inner ring and insert the closed end of the condom into the vagina as far as it will go
- Using the index finger, check that the inner ring is just past the pubic bone
- Leave the outer ring and about 2 cm of the sheath lying against the labia, outside the vagina
- Ensure that the penis is inserted inside (not underneath or beside) the sheath
- Ensure that the outer ring is not pushed into the vagina during intercourse
- If the penis slips under or beside the sheath, remove the condom and insert a new one
- Squeeze and twist the outer ring to ensure that semen is kept inside the sheath during removal.
- Remove the condom immediately after use.

²¹ UNAIDS Best Practice Collection: *The female condom and AIDS*, UNAIDS, April 1997.

The Female Condom for Anal Intercourse?

No studies have examined the suitability of the female condom for use by women or men in anal intercourse, nor has it been designed or approved for that purpose. However, anecdotal reports suggest it may be a possible alternative means of reducing the risk of HIV transmission in penile-anal intercourse.

Dental Dams

Dental dams are latex squares developed by dentists to isolate a tooth for infection control purposes. Although cunnilingus and anilingus carry a negligible to low risk of HIV transmission, dental dams have been recommended for people who wish to reduce risk further.

To use a dental dam:

- Rinse off with water to get rid of powder coating.
- Put some water-based lubricant on the partner's vagina or anus and place a new latex square so that it completely covers the vaginal or anal opening.
- Hold the dam firmly in place with both hands, and apply mouth and tongue to the unlubricated side of the dam only.
- When done, throw away the dental dam.

Many people find that dental dams are small, difficult to use, and greatly reduce sensation. Dams are often available only from medical supply stores. An alternative to dental dams that some people find more accessible and easier to use is to cut open an unused, unlubricated, condom or latex glove and place it over the vagina or anus, following the method described above.

Plastic Wrap

Plastic wrap has also been advocated by some AIDS educators as a risk-reduction tool for cunnilingus and anilingus. Only one brand, Glad Wrap, has been

tested in the laboratory. It was found to be effective for preventing transmission of the herpes simplex virus. It has not been tested as a barrier for HIV. Plastic wrap is not subject to the quality control testing for filtering viruses and microorganisms that condoms require. It is not as elastic as latex, but it is cheap, accessible and easy to use. However, plastic wrap marketed as "microwavable" is more porous than the conventional plastic wrap, and is not recommended for use during sexual activity.

Latex gloves

Latex gloves reduce the risk of HIV transmission via open cuts, sores, lesions, burns or rashes on the hands or fingers. In certain circumstances they are recommended for use during digital-anal and digital-vaginal intercourse and for fisting. However, some people are allergic to latex or to the powder inside latex gloves. Care should also be taken to prevent holes being made in the glove by fingernails during vigorous activity, such as fisting.

The Condom of the Future?

At the time of writing, trials were proposed of a "liquid condom", made from a polymer gel, that is spread over the vagina or anus using an applicator. The substance gelifies in response to body heat and moulds itself around the penis or other inserted object. Excess gel can be flushed out with water after use. Although the efficacy of the gel in preventing HIV, STDs and pregnancy may take some years to be established, it could provide a welcome alternative to conventional condoms and give far greater control over contraception and STD prevention to receptive partners.

Section VI

Increasing and Reducing Risk: Biological Factors

A. Mucosal Immunity and HIV

What is Mucosal Immunity?

Body cavities and canals that are open to the air, including the mouth, nose, eyes, urethra, vagina and rectum, are lined with thin layers of tissue that secrete a protective liquid. These tissues are called 'mucous membranes' or 'mucosa'. Mucous membranes act to prevent germs from infecting the body from outside. The protective effect of mucous membranes is called 'mucosal immunity'.

In recent years, much has been learned about the way in which the body's immune system functions. It has become clear that many factors can influence mucosal immunity, making it harder, or easier, for germs such as HIV to enter the body. This section examines different biological factors that are known to influence mucosal immunity and therefore the risk of HIV transmission.

Sexually Transmitted Diseases (STDs)

Active STDs, such as syphilis, gonorrhea, herpes simplex, human papilloma virus (genital warts) and chlamydia, are known to increase the risk of HIV transmission. There are two reasons for this:

- 1) Any STD-related sores or lesions provide an open portal for HIV to enter the bloodstream and infect cells.
- 2) STDs may weaken mucosal immunity, enabling HIV to enter the body directly through mucous membranes. It appears from recent evidence that repeated infection with STDs, even if each infection has been treated, can weaken mucosal immunity, so that the body's mucous membranes no longer protect it as well from HIV infection.²²

This information is important for a number of reasons. Firstly, it means that people with recurrent STD infections may be at increased risk of HIV infection, and should consider extra precautions for low risk activities such as oral sex. Secondly, it means that taking precautions against STDs may prevent increased risk of HIV infection. Thirdly, it means that people who are at risk for STDs should visit their doctor or STD clinic regularly (at least every six months) and have tests performed which can detect STDs. Any infections that are found should be treated promptly.

There is also evidence that the additional impact of recurrent STDs on the immune system can hasten the progression of HIV disease.²³ For this reason, it is

²² Wasserheit JN. *Heterogeneity of heterosexual transmission: the role of other STDs.* [Abstract We.C.453] 11th International conference on AIDS. July 1996.

²³ Dyer JR, Eron JJ, Hoffman IF, Kazembe P, Vernazza PL, Nkata E, Daly CC, Fiscus SA, Cohen MS. *Association of CD4 cell depletion and elevated blood and seminal plasma human immunodeficiency type 1 RNA concentrations with genital ulcer disease in HIV-1 infected men in Malawi.* *Journal of Infectious Disease* 177:224-7, 1998.

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important that people living with HIV also take precautions to avoid infection with STDs and have them treated promptly if they occur.

Common Vaginal Infections

Common vaginal infections (such as yeast) can weaken mucosal immunity, increasing the risk of HIV transmission. Women should treat common vaginal infections promptly and if possible avoid any high risk sexual activity while the infection persists.

Open Cuts, Sores, Lesions, Ulcers, Burns and Rashes

The principles of transmission make it clear that it is possible for HIV to gain access to the body through open cuts, sores, lesions, ulcers, burns or rashes. Scrapes, incisions, skin rashes, cold sores or genital sores such as herpes should be protected from contact with blood, semen, vaginal fluid and with someone else's mucous membranes. Any sexual activity that could bring blood, semen, vaginal fluid or breast milk into contact with skin or mucous membranes that are inflamed or damaged creates a greater risk of HIV transmission.

Vaginal Drying

It is a practice in some cultures for women to use various herbal mixtures to dry the lining of the vagina before intercourse. This practice tightens the vagina, which may increase pleasure for the male partner. Any substance that dries out the mucosal lining of the vagina reduces mucosal immunity and increases the risk of HIV transmission. This practice should be avoided if possible. A well-lubricated vagina reduces the risk of HIV transmission.

Circumcision

Some recent studies have shown that uncircumcised men are at greater risk of HIV infection than circumcised men²⁴. There are two reasons why this may be so. Firstly, infection may occur directly through the foreskin of the uncircumcised penis,

which has limited mucosal immunity. Secondly, the foreskin provides an environment where HIV may remain infective for longer than it would on a circumcised penis, enabling HIV infection through the urethra. Washing under the foreskin before and after sex, as well as wearing a condom for high risk sexual activities, reduces the risk of HIV infection.

Saliva

HIV can be found in saliva, but in much lower concentrations than in semen, blood, vaginal fluid and breast milk. Furthermore, an enzyme in saliva has been found to inhibit the capacity of HIV to enter white blood cells and therefore to infect the body. For this reason, the exchange of saliva does not pose a risk of HIV transmission. However, if HIV-infected blood is present in saliva, there may be a risk of transmission.

Crack Cocaine

The regular use of crack cocaine may lead to a weakening of mucosal immunity. The smoking of crack cocaine can lead to burns and inflammation in the mouth, which significantly increases the risk of transmission via oral sex.²⁵ Crack cocaine users can reduce this risk through the use of condoms during oral sex.

Douching and Enemas

Although the practice of rinsing the rectum or vagina with liquid before or after sex is believed by some to foster cleanliness, there are no studies to support the usefulness of this activity. In fact, douches and enemas can easily make the mucosal lining more vulnerable to inflammation by removing the protective top layer of tissue and changing its microbacterial surroundings. This reduces mucosal immunity and can increase the risk of HIV transmission during sex. Therefore,

²⁴ Kreiss, J.K., Hopkins SG. *The association between circumcision status and human immunodeficiency virus among homosexual men. Journal of Infectious Diseases* 168(6):1404-8, 1993 Dec.

²⁵ Faruque S, Edlin BR, McCoy CB, Word CO, Larsen SA, Schmid DS, Von Bargen JC, Serrano Y. *Crack cocaine smoking and oral sores in three inner-city neighbourhoods. Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology.* 13:87-92, 1996.

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douches and enemas should be avoided immediately before and after intercourse, if they are used at all.

Spermicides and Virucides

Spermicides are chemical substances that kill sperm and virucides are chemical substances that kill viruses. Spermicides may help prevent transmission of other STDs (which can increase the risk of HIV transmission).

HIV-prevention information often includes references to nonoxynol-9, a spermicide that functions mainly as a back-up in helping prevent pregnancy. It has also been shown to kill HIV and other sexually transmitted organisms in test tubes. Nonoxynol-9 is a chemical barrier used quite widely, and can be found in lubricants, in vaginal foams, in vaginal sponges, and on many brands of pre-lubricated condoms. For several years, nonoxynol-9 has been recommended for contraceptive uses, but there are growing concerns about its negative side effects, particularly in terms of dosage and frequency of use.

Products containing nonoxynol-9 have been linked to trauma of the vaginal and rectal lining, particularly for those engaging in frequent sexual activity. The resulting inflammation could increase the risk of HIV transmission by weakening mucosal immunity, even though nonoxynol-9 may have some anti-HIV properties. It is also not clear whether negative effects are caused by the spermicide itself, or by the media in which it is carried, which are detergent-based and often contain perfumes or other additives.²⁶

Because of the irritation that it can cause, lubricants containing nonoxynol-9 should not be used for anal intercourse. Furthermore, those

using nonoxynol-9 for vaginal intercourse should at least be told that side effects may occur and that irritation of vaginal mucosa might increase the risk of HIV infection. If a woman using nonoxynol-9 spermicide or lubricant experiences vaginal discharge, increased candida infection, burning or numbness, she should discontinue its use and seek advice from a physician or family planning counsellor.

No HIV-specific virucides have been developed as yet to assist in the prevention of HIV transmission. However, a microbicide called BufferGel, which inhibits HIV by maintaining a low pH in the vagina, has shown promising results in early clinical studies, warranting further investigation.²⁷ UNAIDS is supporting research to develop a virucide that may reduce the risk of HIV transmission and enable women to have a greater degree of control in reducing their vulnerability to HIV infection.

Insertive Contraceptive Devices - Diaphragms, IUDs, Cervical Caps, Sponges

Diaphragms, intra-uterine devices (IUDs), cervical caps and vaginal sponges were designed to reduce the risk of pregnancy. They are not effective in blocking transmission of HIV. In some instances, these devices may also cause trauma to the mucosal lining of the vagina, which could lead to increased risk of HIV transmission during intercourse. This irritation may be increased when such devices are used in conjunction with spermicides containing nonoxynol-9.

Hormonal Contraceptives

Hormonal contraceptives have recently been linked to reduced mucosal immunity of the vagina²⁸. It has been observed that oral contraceptives containing the hormone

²⁶ *AIDS Alert*. 1997, Jan, v12, p1.

²⁷ Mayer, K. et al. *BufferGel: Results of the first phase 1 study of a novel vaginal microbicide*. 12th World AIDS Conference Abstract 33158, 1998.

²⁸ Joint WHO/UNAIDS statement. *Progesterone and SIV transmission in monkeys*. May 9 1996.

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progesterone can reduce the thickness of the epithelium (lining of the vagina), which in turn reduces the mucosal immunity of the vagina. Further studies are needed, but it appears at this point that women taking hormonal contraceptives may be at increased risk of HIV infection. Hormonal contraceptives may also increase cervical shedding of HIV in women living with HIV, thereby increasing the risk of HIV transmission to their sexual partners.

B. Viral Load and Anti-HIV Treatments

Viral load is the amount of HIV present in different body fluids and tissues at a given time. A test to measure viral load **in blood plasma** has been widely available in Canada since 1997.

People with a high viral load are more infectious than those with a low viral load. In the normal course of untreated HIV disease, viral load will be very high shortly after infection during the 'seroconversion' period, before the body has begun to make antibodies to HIV. After seroconversion, the viral load decreases. Gradually, as the disease progresses, viral load will increase (at different rates depending on the individual). In the later stages of HIV disease, viral load is very high. Other factors (such as nutrition, STDs, local infections and other illnesses) may also affect a person's viral load at any given time.

The use of combination antiretroviral drugs (combination therapy) can reduce HIV viral load, sometimes below the limit of detection of the available viral load tests. This does not

mean that no HIV is present, merely that it is reduced substantially.

Studies have shown that when viral load is reduced in blood it may also be reduced in semen,²⁹ vaginal fluid,³⁰ and the anorectal mucosa.³¹ This may reduce the risk of HIV transmission. However, it does not eliminate the risk. High risk activities remain high risk activities. No one should assume that a low HIV viral load makes unprotected intercourse a low risk activity. A person's viral load level may fluctuate considerably between tests, and it is possible that higher concentrations of virus may be present at the site of a local infection, such as a sore caused by an STD. Unprotected anal and vaginal intercourse therefore remain high risk activities. Furthermore, when HIV is transmitted from a person taking combination therapy, it is possible that the newly infected person may acquire a drug-resistant strain of the virus, making treatment of HIV disease in the newly-infected person potentially less beneficial.

C. Post-Exposure Prophylaxis (PEP)

The use of combination antiretroviral drugs (combination therapy) may help prevent HIV infection after sexual or injection exposure to HIV. The rationale for its use in this manner is based on studies using combination antiretroviral drugs to prevent infection after an occupational exposure to HIV (e.g. a needlestick injury in a healthcare setting).³² However, the therapy must be initiated within a few hours of exposure, and must be taken for one month. Antiretroviral drugs are not always readily available in such cases, they are expensive, the side effects can be quite severe, the dosing schedules are complicated, and there is no guarantee that infection will be prevented.

²⁹ Vernazza, PL, et al. Effect of antiviral treatment on the shedding of HIV-1 in semen. *AIDS* 11(10):1249-1254, 1997 Aug.

³⁰ Palmore M, Ellerbrock T, Lennox JL, Hart C, Schnell C, Bush T, Evans-Strickfaden T, Conley L, Clancy K. Does Antiretroviral Therapy Reduce the Amount of HIV in Vaginal Secretions of HIV-Infected Women? [Abstract 111.3] 3rd National Conference on Women and HIV May 1997.

³¹ Lampinen, T., et al. Antiretroviral therapy and HIV-1 shedding from anorectal mucosa. 12th World AIDS Conference Abstract 23393, 1998.

³² Cardo, D.M., et al. A case-control study of HIV seroconversion in health care workers after percutaneous exposure. *New England Journal of Medicine*, 1997; 337:1485-90.

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Taking combination therapy after exposure to HIV (called post-exposure prophylaxis, or PEP) may be an option for some people in some instances where it is certain that exposure to HIV has occurred and access to the drugs is immediate. Examples of such situations are: cases of sexual assault where the assailant is known to be HIV-positive and incidents where ejaculation has occurred during intercourse, the condom has broken, and one of the partners is known to be HIV-positive. PEP should never be used as an HIV prevention tool. Its efficacy has not been proven, and there may be difficulties involved in accessing the drugs fast enough and adhering to treatment regimens.

Appendix 1

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