Oral Sex and Sexually Transmitted Infections

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Hot points

- Is oral sex seen as “real sex” ?
- Is oral sex really “no-risk sex” for HIV ?
- Is oral sex actually considered a risk for other STI ?
- Is oral sex protection a realistic goal ?

What is oral sex ?

Oral sex involves giving or receiving oral stimulation (ie sucking or licking) to the genital or anal region:

- **Fellatio** (from latin *fellare* = to suck)

  wet / dry fellatio = with / without contact with semen

- **Cunnilingus** (from latin *cunnus* = vulva)

- **Anilingus** (from latin *anus* = ring) or rimming

Is oral sex seen as “real” sex ?

University Students’ Definition of Sexual Abstinence and Having Sex.
Byers ES, Henderson J and Hobson KM. Arch Sex Behav 2009; 38(5):665-74.

Table 1 Percentage of students who included each behavior in their definition of abstinence

Behaviors	Females	Males	Combined
Bathing/showering together	84.2	81.5	83.1
Deep kissing/tongue kissing	93.3	90.8	92.2
Oral contact with their breasts/nipples	78.8	75.6	77.4
They have oral contact with your breasts/nipples	80.0	77.9	79.1
Touching their genitals—with orgasm	53.9	42.0	48.6
Touching their genitals—no orgasm	62.2	55.4	59.2
They touch your genitals—with orgasm	53.9	41.5	48.5
They touch your genitals—no orgasm	57.0	50.4	54.1
Oral contact with their genitals—with orgasm[a]	41.0	36.9	39.1
Oral contact with their genitals—no orgasm	45.7	41.2	43.7
They have oral contact with your genitals—with orgasm	45.5	36.2	41.4
They have oral contact with your genitals—no orgasm	46.1	38.9	42.9
Masturbating to orgasm in each other’s presence	64.6	66.9	65.6
Penile–vaginal intercourse—with orgasm	7.3	7.7	7.5
Penile–vaginal intercourse—no orgasm	7.3	6.1	6.8
Penile–anal intercourse—with orgasm	5.5	11.5	8.1
Penile–anal intercourse—no orgasm	8.5	14.5	11.1

Note: $N = 298$ (132 males, 166 females)

[a] $N = 225$ due to a printing error on some questionnaires

Is oral sex on the rise?

Oral sex seems to be increasing since the 90's due to the fear of HIV and it has become a common practice mainly in :

- MSM
- Sex workers & clients
- HIV-serodiscordant couples*
- Elderly people
- Patients with Erection Disorders
- Young people

* *Del Romero J AIDS,2002;16:1296. - De Vincenzi I.NEJM, 1994;331:341*

Oral sex in young people

Almost half of US teenagers (15-19 ys) report having ever practiced oral sex

Oral sex by young people is seen as:

- a safe means for avoiding the risk of pregnancy
- an option to experience sex whilst remaining virgin
- low risk of "failure" compared to genital coitus
- low-risk sex practice to prevent HIV infection

Oral sex over time

15% reported oral sex
mainly in stable relationship

(Kinsey report 1953)

Oral sex over time

15% reported oral sex
mainly in stable relationship

(Kinsey report 1953)

> 50% reported oral sex
mainly with casual partners

(National Survey Sexual Health& Behaviour 2010)

Oral Sex Perception in common people

Oral Sex = low risk sex = safer sex

HIV and the oral cavity

Oral cavity is less susceptible to HIV infection than ano-genital mucosa because of has a thicker epithelial layer, a low number of CD4+ cells and saliva's antiviral properties (hypotonic solution, antiviral antibodies, endogenous inhibitors)

The presence of cofactors may increase the risk :

- to give oral sex >>> to receive oral sex
- "wet fellatio" >>> "dry fellatio"
- bleeding gums, menstrual bood, sores, pharingytis, piercing
- presence of other STI (herpes, syphilis, gonorrhoea)
- High n° of sex partners, high n° of sexual acts
- HIV Viral load / ART

HIV sexual transmission: Who risks more ?

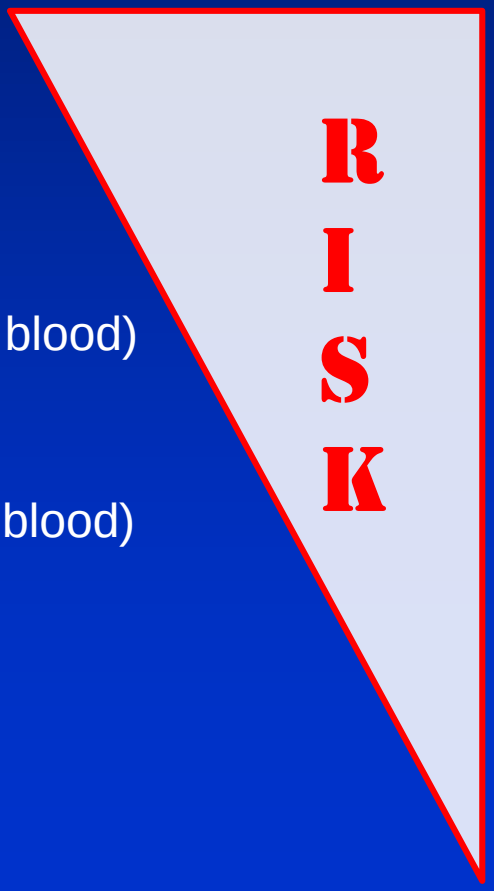
MMWR. Jan 21, 2005;54(RR-2)

- 0.5 % receptive anal sex
- 0.1% receptive vaginal sex
- 0.065 % insertive anal sex
- 0.05% Insertive vaginal sex (higher with menstrual blood)
- 0.01% receptive fellatio

  insertive cunnilingus (higher with menstrual blood)
- 0.005% insertive fellatio

  receptive cunnilingus

  anilingus



Estimating per-act HIV transmission risk: a systematic review

Pragna Patel, Craig B. Borkowf, John T. Brooks, Arielle Lasry, Amy Lansky and Jonathan Mermin

AIDS 2014, **28**:1509–1519

Table 1. Estimated per-act probability of acquiring HIV from an infected source, by exposure route.

Exposure route	Risk per 10000 exposures to an infected source	95% Confidence interval
Parenteral exposure		
Blood transfusion	9250	(8900–9610)
Needle-sharing injection drug use	63[b]	(41–92)
Percutaneous needle stick	23	(0–46)
Sexual exposure[a]		
Receptive anal intercourse	138[c]	(102–186)
Insertive anal intercourse	11[d]	(4–28)
Receptive penile–vaginal intercourse	8[e]	(6–11)
Insertive penile–vaginal intercourse	4[e]	(1–14)
Receptive oral sex	Low[f]	(0–4)
Insertive oral sex	Low[f]	(0–4)
Vertical transmission		
Mother-to-child transmission	2260[g]	(1700–2900)

we believe that although HIV transmission via oral sex is biologically plausible, we are unable to provide a precise numeric estimate.

Oral Sex and HIV Risk

CDC HIV/AIDS Facts — June 2009

Oral Sex Is Not Risk Free

Like all sexual activity, oral sex carries some risk of HIV transmission when one partner is known to be infected with HIV, when either partner's HIV status is not known, and/or when one partner is not monogamous or injects drugs. Even though the risk of transmitting HIV through oral sex is much lower than that of anal or vaginal sex, **numerous studies have demonstrated that oral sex can result in the transmission of HIV and other sexually transmitted diseases (STDs).** Abstaining from oral, anal, and vaginal sex altogether or having sex only with a mutually monogamous, uninfected partner are the only ways that individuals can be completely protected from the sexual transmission of HIV. However, by using condoms or other barriers between the mouth and genitals, individuals can reduce their risk of contracting HIV or another STD through oral sex.

Oral Sex and the Risk of HIV Transmission

The risk of HIV transmission from an infected partner through oral sex is much less than the risk of HIV transmission from anal or vaginal sex. Measuring the exact risk of HIV transmission as a result of oral sex is very difficult. Additionally, because most sexually active individuals practice oral sex in addition to other forms of sex, such as vaginal and/or anal sex, when transmission occurs, it is difficult to determine whether or not it occurred as a result of oral sex or other more risky sexual activities. Finally, several co-factors may increase the risk of HIV transmission through oral sex, including: oral ulcers, bleeding gums, genital sores, and the presence of other STDs. What is known is that HIV has been transmitted through fellatio, cunnilingus, and anilingus.

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention

Oral Sex and HIV Risk

May 2016

Fast Facts

- There is little to no risk of getting or transmitting HIV from oral sex.
- Other STDs and hepatitis can be transmitted during oral sex.
- Latex barriers and medicines to prevent and treat HIV can further reduce the very low risk of getting HIV from oral sex.

Oral sex involves using the mouth to stimulate the penis (fellatio), vagina (cunnilingus), or anus (anilingus).

Reducing the Risk

Individuals can further reduce the already low risk of HIV transmission from oral sex by keeping their male partners from ejaculating in their mouth. This could be done by removing the mouth from the penis before ejaculation, or by using a condom.

Using a barrier like a condom or dental dam during oral sex can further reduce the risk of transmitting HIV, other STDs, and hepatitis. A dental dam is a thin, square piece of latex or silicone that is placed over the vagina or anus during oral sex. A latex condom can also be cut length-wise and used like a dental dam.

The risk of HIV transmission through oral sex is even lower if the HIV-negative partner is taking medicine to prevent HIV (pre-exposure prophylaxis or PrEP) or the HIV-positive partner is taking medicine to treat HIV (antiretroviral therapy or ART) and is virally suppressed.

Additional Resources

CDC-INFO
1-800-CDC-INFO (232-4636)

Oral Sex Perception in common people

Oral Sex = low risk sex = safer sex

Oral Sex = no risk sex = safe sex

Oral Sex = condomless sex

Use of condom in oral sex

Oral sex is almost never protected[1]:

- 6 % adult heterosexuals
- 8.5% young boys
- 10% young girls
- > 10% MSM
- 36-89 % Female Sex Workers[2]

1.Leichliter JS et al. Prevalence and correlates of heterosexual and oral sex in adolescents and adults in the USA. J Infect Dis ; 2007:196:1852-9

2.ML Wong. Factors associated with consostent condom use amd STIs in FSW in Singapore. STI 2016

STI transmissible through oral sex

	given (contact with mouth)	received (contact with genital region)
fellatio	Oral primary syphilis Chancroid Gonococcal & Chlamydial Pharingitis Oral warts	Genital primary syphilis Bacterial urethritis - N.gonorrhoeae, - **N.meningitidis,** - C.Trachomatis **HSV-1 genital herpes**
cunnilingus	Oral primary syphilis **HR-HPV infection**	Genital primary syphilis **HSV-1 genital herpes** BV, yeasts
anilingus	Oral primary syphilis Hepatitis A and B Enterocolitis (E.coli, amebiasis, giardiasis)	Anal primary syphilis **HSV-1 anal herpes** Gonococcal proctitis **LGV ?**

How STI can be transmitted

STI may be transmitted through oral sex in 3 different ways:

- by organic liquid (semen, vaginal or anal discharge, blood)
  HIV, HBV, HAV, HPV, N.gonorrhoeae, C.trachomatis,
  amebiasis, giardiasis

- by the direct contact between oral and genital or anal mucosa
  syphilis, HSV-1, HPV,

- by an indirect contact (saliva used as natural lubricant)
  HPV, HSV-1, N.gonorrhoeae,

Meningococcal disease

Meningococcal meningitis has been reported in MSM during 2010-16 in the USA (NYC, LA, Chicago) and in Europe (Berlin, Paris)

It is caused by Neisseria meningitidis serotype C, gram-negative commensal bacterium colonizing the pharynx of 5 -10% gen.population

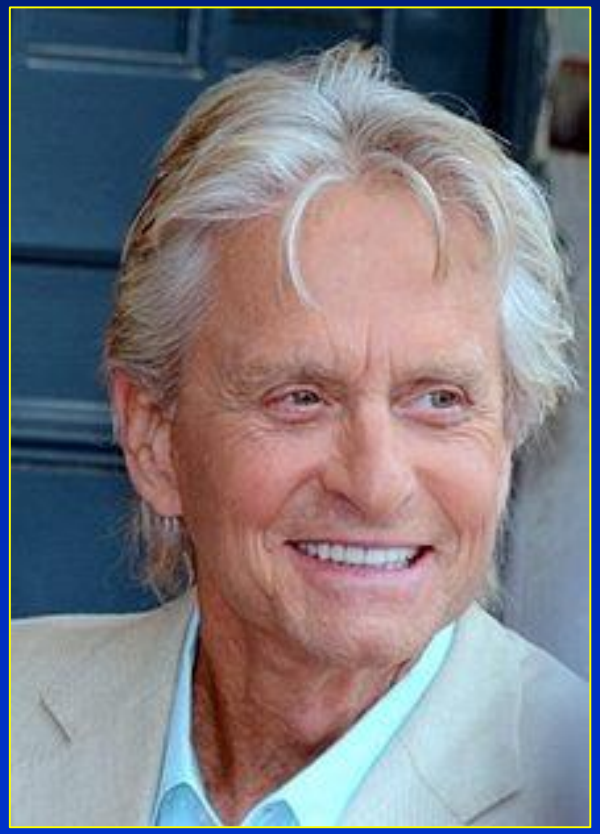
Asymptomatic oral infection

- sepsis ----> invasive meningococcal disease
- oral-genital transmission ---> urethritis

THINK WHEN :

Positive microscopic smear and colture are not confirmed by NAAT

HPV oral infection and cancer



HPV oral infection and cancer

HPV related oral cancer has been increasing over the past 10 years

Oral cancer is seen mainly in

- M:F = 3:1
- Middle age (40-55 ys) younger than smoke & tobacco cancer
- White ethnicity
- High number of lifetime ***oral*** partners
- Marijuana smoking

It has not been showed a higher incidence of oral cancer neither in MSM nor in HIV-positive populations.

Why HPV related oral cancer is more common in hetero males* ?

The incidence of oral cancer in MSW is much higher than in women and in MSM.

A possible explanation is that the probability of acquiring oral HPV from fellatio is lower than from cunnilingus for the following reasons

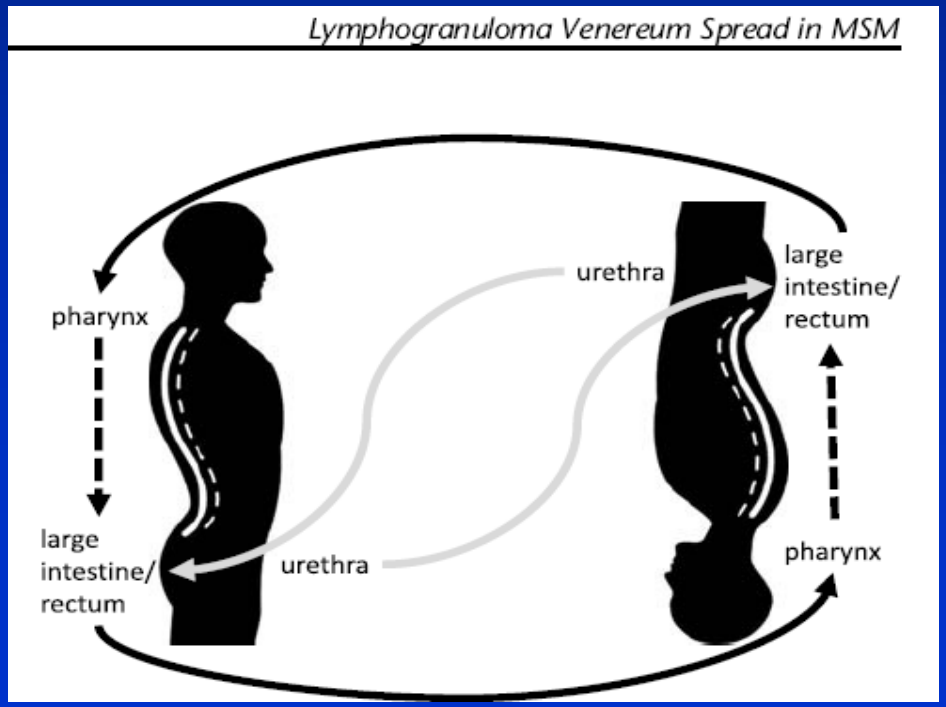
- greater HPV viral load due to cervicovaginal secretion shedding
- A longer duration of HPV cervical infection compared to male genital infection
- A more efficient immunune response after infection of cervix or anus which is lacking in MSW.

** Beachler DC, D'Souza G. Oral HPV infection and head and neck cancers in HIV-infected individuals. Curr Opin Oncol 2013;25(3):503-510*

The Enigma of Lymphogranuloma Venereum Spread in Men Who Have Sex With Men: Does Ano-Oral Transmission Plays a Role?

Henry John C. de Vries, PhD, MD†‡*

Sexually Transmitted Diseases • Volume 43, Number 7, July 2016



Lymphogranuloma Venereum proctitis

The majority of reported LGV infections in MSM are found in the ano-rectal canal and the urogenital involvement is exceptional and usually asymptomatic

The rectal infection may be the consequence of:

a) asymptomatic urogenital infection

b) fisting e/o sharing sex toys

c) oral-fecal route*

** Rank RG, Yeruva L. An alternative scenario to explain rectal positivity in Chlamydia-infected individuals. Clin Infect Dis 2015; 60: 1585–1586.*

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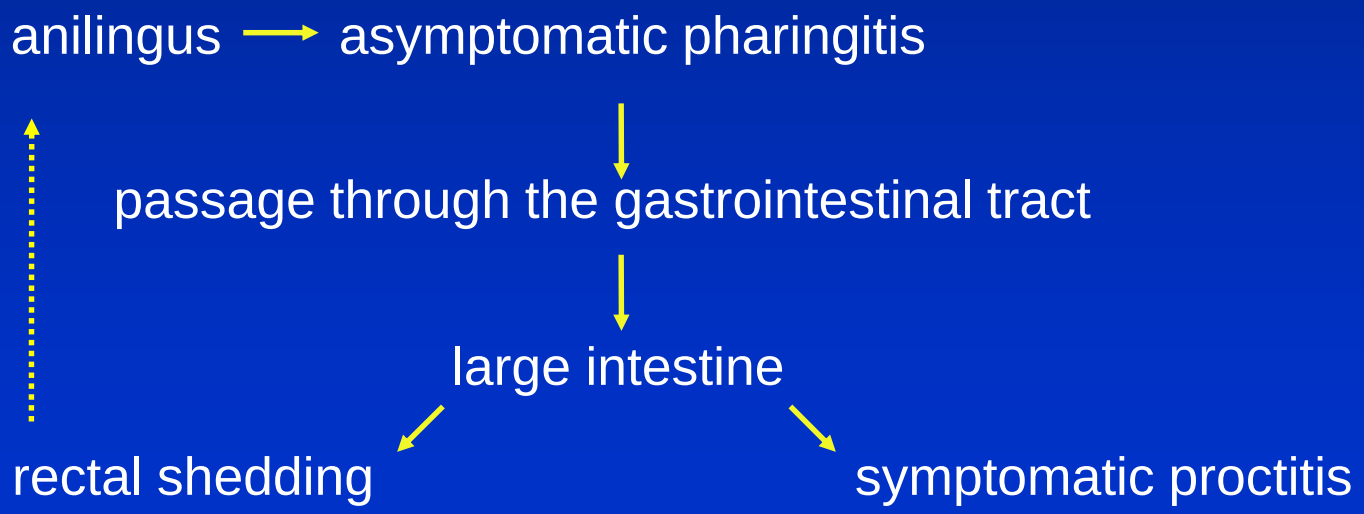

Herpetic infection

HSV-2

HSV-1

HSV-1 genital herpes

HSV-1 is the increasing cause of genital herpes mainly in young people in developed countries for:

- increase of oral sex
- lowering of the age of sexual debut (oral sex as first sexual act)
- reduction of HSV-1 oral infection in the infancy

↓

lack of immune protection at the sexual debut

↓

higher susceptibility to the primary infection in the genital area

Recurrent herpes labialis and HSV-1 genital herpes: which is the link ?

S Delmonte, F Sidoti, S Ribero, I Dal Conte, A Curtoni, G Ciccarese, E Stroppiana, ML Stella, C Costa, R Cavallo, A Rebora, F Drago

" Prior oral-labial HSV-1 infection is likely to protect against the acquisition of genital HSV-1 disesae " *(Reeves W et al. NEJM 1981;305:315-319)*

Multicenter study (Turin, Genoa) on patients with HSV-1 genital herpes (GH) compared with a control group of STI attenders without any history of GH

The aim of the present work was to study the influence of HSV-1 serology and a history of recurrent oral herpes labialis for the development of HSV-1 related genital herpes

	Genital Herpes	Control Group	Total	P value
IgG anti HSV-1 positive serology	**35%** (49/141)	**67%** (47/70)	**46%** (96/211	<0.001
History of recurrent oral herpes	**4%** (6/141)	**31%** (22/70)	**13%** (28/211))	<0.001
History of recurrent herpes labialis and IgG HSV-1 positive serology	**12%** (6/49)	**47%** (22/47)	**29%** (28/96)	0.006

A history of Recurrent Oral Herpes seems to be protective against the appearance of HSV-1 Genital Herpes

Prevention

- Remind that oral sex is ”real” sex and it is not risk-free
- Fellatio: un-lubricated condom

  prefer “dry oral sex “

  avoid keeping organic liquid in the mouth for a long time
- Cunninlingus / anilingus: dental dam or cut-open condom
  or plastic food wrap (cellophane)
- Antiseptic rinsing (Chlorexidine) before sex to prevent bacterial uretrhritis*
- Regular health check for STI (syphilis, NG, CT and HIV)
- PrEP in the HIV-negative partner
- Vaccination for hepatitis A and B, HR-HPV and Ser.C meningococcus

* Kolahi J et al. Chlorhexidine rinse for prevention of urethritis linked to oral sex. *Int Arch Medicine* 2010;**3**:9

Non-emphasis of oral sex risk

PROS

- Condomless oral sex has a risk lower than anal or genital unprotected sex
- Oral sex may substitute anal-genital sex only with high-risk partners
- Oral sex may be an easy way to check the genital area

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CONS

- Oral sex may favour promiscuity (more partners)

The “sunscreen paradox”

Conclusions

- Oral sex is on the rise and deserves our attention in counselling
- Oral sex is usually condomless
- Oral sex is a low-risk practice for the transmission of HIV
- Oral sex is a sexual practice at high risk of STI transmission
- The risk of becoming infected is directly linked to the number of sex partners