

Anal intraepithelial neoplasia (AIN)

What is anal intraepithelial neoplasia (AIN)?

AIN is the name given to the appearance of abnormal cells in the skin just inside or immediately outside the anus. Sometimes AIN occurs in both places at the same time, and in women, may occur at nearby sites of the vulva (VIN) and cervix (CIN).

There are different grades of AIN according to how the cells look under the microscope, from AIN1 (minor changes) to AIN3 (more severe changes).

Why is AIN important?

AIN is important because there is a risk that it can transform into anal cancer over many years. Overall, this risk is low, though certain risk factors associated with immunodeficiency such as organ transplants and HIV infection, increase the risk.

What are the symptoms of AIN?

Most people who have AIN have no symptoms and don't know they have it. If symptoms do occur, they may include discolouration of the skin, itching, pain, lumpy skin or very rarely, bleeding. AIN3 does not cause more symptoms than AIN1.

What causes AIN?

The precise cause of AIN is unknown. However, AIN is often associated with the presence of a virus known as the human papilloma virus (HPV). Smoking, usually in combination with the HPV infection, accelerates the development of AIN.

What is human papilloma virus (HPV) and what are the symptoms?

HPV is one of the most common viruses in the world. Most people will encounter HPV at some stage in their lives. The majority of people infected with HPV have no symptoms or signs and their immune system gets rid of it successfully. However, in a minority of people, the infection persists and they may then go on to develop warts or abnormal skin patches.

How is HPV transmitted?

HPV is spread by skin-to-skin contact during oral, vaginal or anal sex with an infected partner.

How can transmission be prevented?

The only way to prevent an HPV infection is to avoid direct skin-to-skin contact with an infected person. In sexually active individuals, using condoms may partially reduce the risk of developing diseases linked to HPV. Condoms also provide excellent protection against other sexually transmitted infections.

It is possible that the new vaccines designed to prevent cervical cancer may partially prevent the development of AIN and anal cancer, although long-term trials are still evaluating the outcomes.

Diagnosis and treatment

What tests can be done to diagnose AIN?

Close examination of the external anal area by a specialist may suggest a diagnosis of AIN. However, changes can often be very mild and easily missed. A biopsy or sample of tissue is taken (usually under a general anaesthetic) to obtain a definitive diagnosis and establish the grade of AIN.

Some specialists use an anal smear (the 'Pap' smear) test or look at the anal skin with a high-resolution visual instrument (an anoscopy). However, these methods are not commonly used and we are not certain how effective they are.

How is AIN treated?

If you have AIN, it is important that you discuss the matter with your specialist. The body can completely heal itself from AIN, particularly AIN1, so it may be appropriate to monitor you regularly.

The most commonly used treatments are: surgical removal, laser or diathermy*. In a few cases, a specialist may prescribe skin ointments such as 5-flourouracil cream. Currently, we do not know whether these treatments prevent the development of anal cancer.

What should I expect after treatment?

If you have AIN3, close follow-up will be recommended with careful clinical examination at intervals of approximately 6 months over many years. If the specialist has concerns at these examinations, you may need further biopsies.

Other advice

Smoking cessation

Smoking makes cell changes happen more quickly, so we advise you to stop smoking.

- A FREE smoking cessation service is available for all patients at The Christie
0161 446 8236
- NHS Smokefree Freephone **0800 022 4332**
- Macmillan Cancer Support can advise on complementary services nationwide
0808 808 00 00
- QUIT smokers quitline provides support and advice **0800 00 22 00**.

Cervical cancer screening in women

In many women with AIN, there is a link with abnormalities of the cervix. We recommend regular cervical screening.

*diathermy – high-frequency electromagnetic currents are used to generate local heat in body tissues to destroy abnormal cells.

High risk patient groups

HIV and immuno-compromised patients

Patients who are immuno-compromised are at increased risk of the development of AIN, and when it occurs, the AIN to anal cancer process may speed up. These groups include:

- HIV-positive patients
- Men who have sex with men, HIV-negative
- Renal (kidney) transplant patients
- Cardiac (heart) transplant patients
- Patients on long-term immuno-suppressants

These patients may need closer and more frequent follow-up. They should discuss their case with the specialist.

Further information

The British Society for Colposcopy and Cervical Pathology

Provides information on cervical screening and HPV. Frequently asked questions and guidance.

Tel: **0121 607 4716**

www.bsccp.org.uk

If you need information in a different format, such as easy read, large print, BSL, braille, email, SMS text or other communication support, please tell your ward or clinic nurse.

We try to ensure that all our information given to patients is accurate, balanced and based on the most up-to-date scientific evidence. If you would like to have details about the sources used please contact **patient.information@christie.nhs.uk**

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For more information about The Christie and our services, please visit **www.christie.nhs.uk** or visit the cancer information centres at Withington, Oldham or Salford.

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