Cancer Association of South Africa (CANSA)

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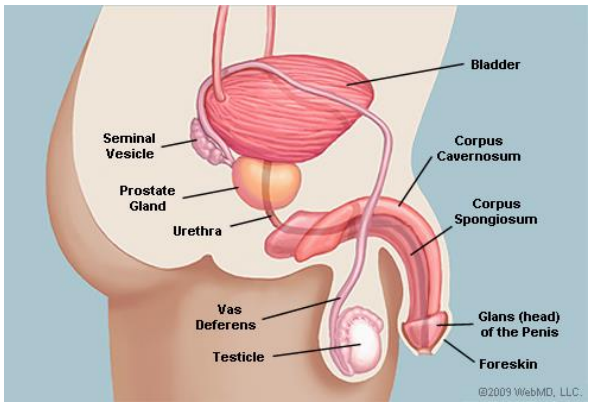
Fact Sheet on Penile Intraepithelial Neoplasia (PeIN)

Introduction

The penis is the male sex organ, reaching its full size during puberty. In addition to its sexual function, the penis acts as a conduit for urine to leave the body.



[Picture Credit: Male Reproductive System]

The penis is made of several parts:

- Glans (head) of the penis: In uncircumcised men, the glans is covered with pink, moist tissue called mucosa. Covering the glans is the foreskin (prepuce). In circumcised men, the foreskin is surgically removed and the mucosa on the glans transforms into dry skin.

- Corpus cavernosum: Two columns of tissue running along the sides of the penis. Blood fills this tissue to cause an erection.

- Corpus spongiosum: A column of sponge-like tissue running along the front of the penis and ending at the glans penis; it fills with blood during an erection, keeping the urethra -- which runs through it -- open.

- The urethra runs through the corpus spongiosum, conducting urine out of the body.

An erection results from changes in blood flow in the penis. When a man becomes sexually aroused, nerves cause penis blood vessels to expand. More blood flows in and less flows out of the penis, hardening the tissue in the corpus cavernosum.
(WebMD).

Intraepithelial Neoplasia (IN)

Intraepithelial neoplasia (IN) is an *in situ* carcinoma confined to an epithelium that may superficially penetrate adnexal (associated) glands, measuring < either 3mm or 5mm depending on the criteria used. IN is adjectivally modified according to the site of origin.

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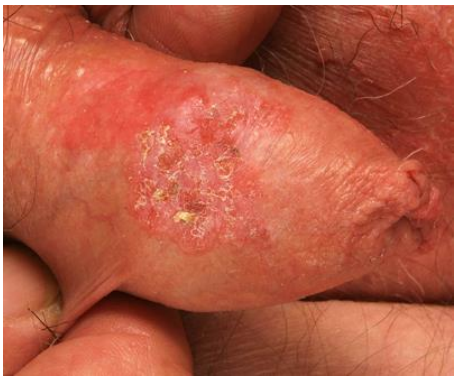
The following Intraepithelial neoplasia have been identified:

- AIN Anal intraepithelial neoplasia
- CIN Cervical intraepithelial neoplasia, see there.
- DIN Ductal intraepithelial neoplasia, see there.
- OIN Oral intraepithelial neoplasia
- PAIN Perianal intraepithelial neoplasia
- PeNI Penile intraepithelial neoplasia
- PIN Prostatic (or rarely Penile) intraepithelial neoplasia
- VAIN Vaginal intraepithelial neoplasia
- VIN Vulvar intraepithelial neoplasia

Penile Intraepithelial Neoplasia (PeIN)

Penile intraepithelial neoplasia is a rare pre-cancerous disease of the outer skin layer (epidermis) of the penis.



[Picture Credit: Penile Intraepithelial Neoplasia 1]

Other names for penile intraepithelial neoplasia include:

- Erythroplasia of Queyrat
- Bowen disease of the penis
- in-situ squamous cell carcinoma of the penis
- P.I.N.

(DermNet.NZ).

Incidence of Penile Cancer in South Africa

According to the National Cancer Registry (2013) the following number of penile cancer cases was histologically diagnosed in South Africa during 2013:

Group 2013	Actual Number of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All Males	166	1:1 136	0,46%
Asian males	6	1:711	0,72%
Black males	118	1:1 269	1,10%
Coloured males	8	1:1 444	0,19%
White males	34	1:946	0,17%

The frequency of histologically diagnosed cases of penile cancer in South Africa for 2013 was as follows (National Cancer Registry, 2013):

Group 2013	0 – 19 Years	20 – 29 Years	30 – 39 Years	40 – 49 Years	50 – 59 Years	60 – 69 Years	70 – 79 Years	80+ Years
All males	0	1	27	46	34	29	18	5
Asian males	0	0	0	1	0	4	1	0
Black males	0	1	25	38	27	14	7	0
Coloured males	0	0	0	2	0	2	4	0
White males	0	0	2	5	7	10	5	5

Clinical Features of Penile Intraepithelial Neoplasia (PeIN)

The clinical features of PeIN include:

- Whitish areas in glans penis, coronal sulcus or inner foreskin
- Erythema (redness) and ulceration may predominate in some cases
- It may be found as an exclusive *in situ* lesion or associated with an invasive component
- It may be difficult to distinguish from squamous hyperplasia

(PathologyOutlines.Com).

[Picture Credit: Penile Intraepithelial Neoplasia 2]

Histologic Classification of Penile Intraepithelial Neoplasia (PeIN)

Penile squamous cell carcinomas (SCCs) and their corresponding precancerous lesions can be classified in 2 major groups:

- human papillomavirus (HPV) related
- human papillomavirus (HPV) unrelated

In the former (warty and basaloid SCC), there is a predominance of undifferentiated basaloid cells. In the latter (e.g., usual, papillary, and verrucous SCC), the predominant cell is larger with abundant eosinophilic cytoplasm.

Based on these morphologic features, a new term, “penile intraepithelial neoplasia” (PeIN), was proposed. PeIN is further subclassified into differentiated and undifferentiated, with the latter being subdivided into basaloid, warty, and warty–basaloid subtypes. Macroscopically (with the naked eye), PeIN subtypes are indistinguishable. Microscopically (under a microscope), differentiated PeIN is characterised by acanthosis, parakeratosis, enlarged keratinocytes with abundant ‘pink’ cytoplasm (abnormal maturation), and hyperchromatic (abnormally highly coloured, excessively stained, or overpigmented) cells in the basal layer.

In basaloid PeIN the epithelium is replaced by a monotonous population of uniform, small, round, and basophilic cells. Warty PeIN is characterised by a spiky surface, prominent atypical parakeratosis, and pleomorphic koilocytosis. Warty–basaloid PeIN show features of both warty and basaloid PeIN.

There is a significant association of subtypes of PeIN with specific variants of invasive SCCs. This is a simple and reproducible nomenclature for penile precancerous lesions based on cell type and differentiation. It takes into account the similarities between vulvar and penile pathology and the hypothesis of a bimodal pathway of penile cancer progression. (Seminars in Diagnostic Pathology).

Diagnosis of Penile Intraepithelial Neoplasia (PeIN)

The diagnosis is often delayed, because penile intraepithelial neoplasia may resemble other conditions such as balanitis, candidiasis, dermatitis and psoriasis..

Lesions are single or multiple, red plaques on the glans or inner aspect of the foreskin. They may have a smooth, velvety, moist, scaly, eroded or warty surface. The following signs and symptoms may occur:

- Redness and inflammation
- Itching
- Crusting or scaling
- Pain
- Ulcers
- Bleeding
- In the late stages, discharge from penis, difficulty pulling back foreskin or difficulty passing urine

(DermNet.NZ)

Staging of Penile Intraepithelial Neoplasia (PeIN)
Staging uses the tumour, node and metastasis (**TNM**) classification of malignant tumours:

Primary tumour (**T**):
TX: primary tumour cannot be assessed
T0: no evidence of primary tumour
Tis: carcinoma *in situ*
Ta: non-invasive verrucous carcinoma, not associated with destructive invasion
T1: tumour invades subepithelial connective tissue
T2: tumour invades corpus spongiosum or corpora cavernosa
T3: tumour invades urethra
T4: tumour invades other adjacent structures

Regional lymph nodes (**N**):
NX: regional lymph nodes cannot be assessed
N0: no regional lymph node metastasis
N1: intranodal metastasis in a single inguinal lymph node
N2: metastasis in multiple or bilateral inguinal lymph nodes
N3: metastasis in pelvic lymph node(s); unilateral, bilateral, or extranodal extension of regional lymph node metastasis

Distant metastasis (**M**):
M0: no distant metastasis
M1: distant metastasis
(Patient.co.uk).

Treatment of Penile Intraepithelial Neoplasia (PeIN)
Sin biopsy should be performed to confirm the diagnosis, as it may resemble other forms of chronic balanitis. Biopsy is also essential to rule out invasive squamous cell carcinoma, which requires more aggressive treatment.

It is important to maintain good genital hygiene. Penile intraepithelial neoplasia can be treated in several different ways. Multidisciplinary care may be necessary.

- 5-fluorouracil cream
- Imiquimod cread
- Cryotherapy
- Curettage & cautery

- Laser vaporisation
- Photodynamic therapy
- Radiotherapy
- Excision
- Interferon alpha

Mohs micrographic surgery appears to be highly effective and the surgical treatment of choice in severe or recurrent cases of penile intraepithelial neoplasia.

The disease recurs in 3-10% of patients, so close follow-up is necessary to ensure a complete cure.

Partners of patients with penile intraepithelial neoplasia should be screened for other forms of intraepithelial neoplasia caused by human papilloma virus (HPV) in the genital area (cervical, vulvar and anal cancer).

Many national immunisation programmes now include a vaccine against the causative human papillomaviruses HPV-16 and 18. Vaccination of boys and young men should be considered for inclusion, to reduce the risk of developing penile intraepithelial cancer in the future.
(DermNet.NZ).

Which operation a man may have will depend on:

- Where the cancer is
- The type and size of the cancer
- Whether the cancer has spread

Before the operation, the doctor will provide information about the best type of surgery for the particular type of cancer.

Circumcision - circumcision is the removal of the foreskin. If the cancer only affects the foreskin, this may be the only treatment that will be needed. Circumcision is also done if the patient needs radiotherapy treatment.

A person can have a circumcision under a local or a general anaesthetic. After the operation the penis will be slightly swollen and bruised for about a week. There will be some stitches that will dissolve after a week to 10 days. It is important to keep the wound clean and one should wash or clean it as directed. The patient may have some pain for a few days, and need to take a mild painkiller such as paracetamol.

Some men worry about their sex lives after being circumcised. However there is no evidence that men who are circumcised are less sensitive or have any more difficulty getting an erection after the surgery.

Mohs micrographic surgery (MMS) - this is a specialist type of surgery and one may have to be referred to another hospital to have it. Mohs micrographic surgery (MMS) is sometimes used for verrucous carcinoma, a rare type of squamous cell penile cancer.

MMS is a slow process because a small amount of cancer tissue is removed at a time. But the person will keep as much healthy skin as possible. During surgery the tissue is immediately examined under a microscope. If the tissue contains cancer cells, more tissue is removed and examined. The surgeon continues in this way until they have removed all the cancer. This treatment is not suitable for everyone.

Laser surgery and cryotherapy - doctors use these treatments for carcinoma *in situ* (CIS))

- Laser surgery - this is the most common. The surgeon uses a powerful beam of light that acts like a knife. It cuts away the tumour but does not go too deep into the tissue. If having laser treatment the patient will have a general anaesthetic.

- Cryotherapy - cryotherapy uses liquid nitrogen to freeze and kill the cancer cells. The doctor places a probe on the area to freeze the cells. After having had cryotherapy the skin usually develops a blister, which may form a scab or crust. The blister and scab usually fall off after a couple of weeks. Once the skin has healed it may be a different colour, usually leaving a paler scar.

Some individuals can have cryotherapy under a local anaesthetic. But it can take over an hour, so the doctor might give him either a sedative or a general anaesthetic.

Wide local excision - this is when the cancer is removed along with a border of healthy tissue around it. This is called a clear margin of tissue. The doctor removes this border of healthy tissue to lower the risk of the cancer coming back. The surgeon will send the tissue sample to the laboratory, where a pathologist will look at the cells under a microscope. This will help the doctors find out more about the cancer.
The pathologist will also check that the surgeon has removed the tumour together with a border of tissue that is free of cancer cells.

Patients will need a general anaesthetic for a wide local excision and will be in hospital overnight. The patient will have some pain after the surgery and his penis may be swollen for a week to 10 days.

Removal of the head of the penis (glansectomy) – one may hear this operation referred to as a glansectomy. This is because the surgeon removes the glans (head). A person might have this operation if the tumour is stage 1 or T1 or T2. The surgeon will then do a skin graft to reconstruct the head of the penis. The skin is usually taken from the thigh. After this operation the penis will look like a circumcised penis. Such a person will be able to pass urine normally and most men who were sexually active before the operation remain so after the operation.

If cancer has started to grow into the shaft of the penis, the surgeon will need to remove a bit more. The man will still have a skin graft done but the penis will be shorter. It is sometimes possible for surgeons to combine this operation with a penis lengthening operation.

After a glansectomy operation the patient will have a tube to drain the urine from the bladder (catheter) for about 5 days. And he will need to stay in bed for 1 to 2 days. This is to give the graft the best chance to heal. The person needs to try not to rub or brush against the skin graft on the penis for the first couple of weeks. The nurse will take out the stitches around 5

days after the operation. The patient will also have a wound on his thigh, where the surgeon removed the skin. It will take at least a couple of weeks for the area on the thigh to heal.

Removal of the penis (penectomy) - if the cancer is large, the patient may need to have either part or all of his penis removed (partial or total penectomy). A total penectomy is only done if the cancer is deep into the penis, or is at the base of the penis.

Nowadays doctors usually do a glansectomy rather than a partial penectomy. If the person needs a partial penectomy, the surgeon will remove the end of the penis. They will aim to leave enough of the shaft of the penis behind to allow the person to pass urine standing up, with the flow of urine clear of the body.

If one needs a total penectomy the surgeon will remove the shaft and root of the penis. The root is the part which goes up inside the body. During the operation, the surgeon will form a hole between the anus and the scrotum, through which the person will pass urine. The patient will still have control over passing urine, because the muscle that keeps the bladder closed is further inside the body, above the penis.

Because penectomy is a bigger operation, the patient will need to stay in hospital for at least a week, perhaps longer. It may be possible to reconstruct the penis after a penectomy using tissue from elsewhere in the body. This operation is not done very often. There are different ways to do the reconstruction. For example, the surgeon can take skin and muscle from one's arm. Or one might have surgery in 2 stages to reconstruct the penis. In the first operation the surgeon will form a flap of skin from the scrotal sac and attach this flap to the stump of the penis. This stays in place for 4 to 6 weeks. In the second operation, the end attached to the scrotum sac is cut. If possible, the surgeon will reconnect nerves so that the person will still have some feeling in his penis.

This operation means there is a chance of having a penis that looks satisfactory and one can use to pass urine normally. Some men have been able to have sexual intercourse with vaginal penetration after this surgery.

Whichever way reconstructive surgery is done, it will involve another operation. A specialist plastic surgeon has to do the surgery. It is important to talk to the surgeon before the operation, so that one is clear about what they will be able to achieve and what the chances are of getting an erection afterwards.

Removal of the lymph nodes (lymphadenectomy) - the surgeon may also remove lymph nodes from the groin. As part of the test to diagnose penile cancer the doctor will check the lymph nodes to see if they are swollen or enlarged. If they are, one will have a fine needle aspiration. If this shows cancer cells the surgeon will remove the lymph nodes. This is called a lymph node dissection. If the lymph nodes are larger than normal but the fine needle aspiration does not show any cancer cells one may have the enlarged node taken out and tested. If cancer cells are found in it the patient will have the rest of the nodes removed.

One usually has surgery to remove the lymph nodes at the same time as surgery to the penis. The surgeon will make a cut into the groin to take the affected lymph nodes out. The patient will be in hospital for a few days and will have a wound about 10cm long. He will also have a drain near to the wound to drain fluid that can build up around the operation site.

Depending on the results from the removal of lymph nodes in the groin, the patient may need to have the lymph nodes in his pelvis taken out as well. The person usually has this as a second operation. The surgeon may make a cut (incision) in the lower part of the abdomen to remove the lymph nodes. Or the patient may have keyhole (laparoscopic) surgery.

With this, the surgeon makes several small cuts in the abdomen. They put a bendy narrow tube called a laparoscope through these entry sites. The laparoscope has a light and camera attached so the surgeon can see what they are doing on a television screen. It also has small instruments that fit down the tube, which the surgeon controls. Generally, there is less pain afterwards and recovery is slightly quicker with laparoscopic surgery compared to open surgery. In some hospitals, one may have robot assisted laparoscopic surgery to remove lymph nodes.

Sentinel node biopsy - over the past few years doctors have been looking at a new way of checking lymph nodes for cancer spread. The sentinel node is the first or nearest lymph node to the cancer. If the sentinel node does not have any cancer cells it is unlikely that the cancer has spread.
(Cancer Research UK).

About Clinical Trials
Clinical trials are research studies that involve people. These studies test new ways to prevent, detect, diagnose, or treat diseases. People who take part in cancer clinical trials have an opportunity to contribute to scientists' knowledge about cancer and to help in the development of improved cancer treatments. They also receive state-of-the-art care from cancer experts.

Types of Clinical Trials
Cancer clinical trials differ according to their primary purpose. They include the following types:

Treatment - these trials test the effectiveness of new treatments or new ways of using current treatments in people who have cancer. The treatments tested may include new drugs or new combinations of currently used drugs, new surgery or radiation therapy techniques, and vaccines or other treatments that stimulate a person's immune system to fight cancer. Combinations of different treatment types may also be tested in these trials.

Prevention - these trials test new interventions that may lower the risk of developing certain types of cancer. Most cancer prevention trials involve healthy people who have not had cancer; however, they often only include people who have a higher than average risk of developing a specific type of cancer. Some cancer prevention trials involve people who have had cancer in the past; these trials test interventions that may help prevent the return (recurrence) of the original cancer or reduce the chance of developing a new type of cancer

Screening - these trials test new ways of finding cancer early. When cancer is found early, it may be easier to treat and there may be a better chance of long-term survival. Cancer screening trials usually involve people who do not have any signs or symptoms of cancer. However, participation in these trials is often limited to people who have a higher than average risk of developing a certain type of cancer because they have a family history of that

type of cancer or they have a history of exposure to cancer-causing substances (e.g., cigarette smoke).

Diagnostic - these trials study new tests or procedures that may help identify, or diagnose, cancer more accurately. Diagnostic trials usually involve people who have some signs or symptoms of cancer.
Quality of life or supportive care - these trials focus on the comfort and quality of life of cancer patients and cancer survivors. New ways to decrease the number or severity of side effects of cancer or its treatment are often studied in these trials. How a specific type of cancer or its treatment affects a person's everyday life may also be studied.

Where Clinical Trials are Conducted

Cancer clinical trials take place in cities and towns in doctors' offices, cancer centres and other medical centres, community hospitals and clinics. A single trial may take place at one or two specialised medical centres only or at hundreds of offices, hospitals, and centres.

Each clinical trial is managed by a research team that can include doctors, nurses, research assistants, data analysts, and other specialists. The research team works closely with other health professionals, including other doctors and nurses, laboratory technicians, pharmacists, dieticians, and social workers, to provide medical and supportive care to people who take part in a clinical trial.

Research Team

The research team closely monitors the health of people taking part in the clinical trial and gives them specific instructions when necessary. To ensure the reliability of the trial's results, it is important for the participants to follow the research team's instructions. The instructions may include keeping logs or answering questionnaires. The research team may also seek to contact the participants regularly after the trial ends to get updates on their health.

Clinical Trial Protocol

Every clinical trial has a protocol, or action plan, that describes what will be done in the trial, how the trial will be conducted, and why each part of the trial is necessary. The protocol also includes guidelines for who can and cannot participate in the trial. These guidelines, called eligibility criteria, describe the characteristics that all interested people must have before they can take part in the trial. Eligibility criteria can include age, sex, medical history, and current health status. Eligibility criteria for cancer treatment trials often include the type and stage of cancer, as well as the type(s) of cancer treatment already received.

Enrolling people who have similar characteristics helps ensure that the outcome of a trial is due to the intervention being tested and not to other factors. In this way, eligibility criteria help researchers obtain the most accurate and meaningful results possible.

National and International Regulations

National and international regulations and policies have been developed to help ensure that research involving people is conducted according to strict scientific and ethical principles. In these regulations and policies, people who participate in research are usually referred to as "human subjects."

Informed Consent

Informed consent is a process through which people learn the important facts about a clinical trial to help them decide whether or not to take part in it, and continue to learn new information about the trial that helps them decide whether or not to continue participating in it.

During the first part of the informed consent process, people are given detailed information about a trial, including information about the purpose of the trial, the tests and other procedures that will be required, and the possible benefits and harms of taking part in the trial. Besides talking with a doctor or nurse, potential trial participants are given a form, called an informed consent form, that provides information about the trial in writing. People who agree to take part in the trial are asked to sign the form. However, signing this form does not mean that a person must remain in the trial. Anyone can choose to leave a trial at any time—either before it starts or at any time during the trial or during the follow-up period. It is important for people who decide to leave a trial to get information from the research team about how to leave the trial safely.

The informed consent process continues throughout a trial. If new benefits, risks, or side effects are discovered during the course of a trial, the researchers must inform the participants so they can decide whether or not they want to continue to take part in the trial. In some cases, participants who want to continue to take part in a trial may be asked to sign a new informed consent form.

New interventions are often studied in a stepwise fashion, with each step representing a different “phase” in the clinical research process. The following phases are used for cancer treatment trials:

Phases of a Clinical Trial

Phase 0. These trials represent the earliest step in testing new treatments in humans. In a phase 0 trial, a very small dose of a chemical or biologic agent is given to a small number of people (approximately 10-15) to gather preliminary information about how the agent is processed by the body (pharmacokinetics) and how the agent affects the body (pharmacodynamics). Because the agents are given in such small amounts, no information is obtained about their safety or effectiveness in treating cancer. Phase 0 trials are also called micro-dosing studies, exploratory Investigational New Drug (IND) trials, or early phase I trials. The people who take part in these trials usually have advanced disease, and no known, effective treatment options are available to them.

Phase I (also called phase 1). These trials are conducted mainly to evaluate the safety of chemical or biologic agents or other types of interventions (e.g., a new radiation therapy technique). They help determine the maximum dose that can be given safely (also known as the maximum tolerated dose) and whether an intervention causes harmful side effects. Phase I trials enrol small numbers of people (20 or more) who have advanced cancer that cannot be treated effectively with standard (usual) treatments or for which no standard treatment exists. Although evaluating the effectiveness of interventions is not a primary goal of these trials, doctors do look for evidence that the interventions might be useful as treatments.

Phase II (also called phase 2). These trials test the effectiveness of interventions in people who have a specific type of cancer or related cancers. They also continue to look at the safety of interventions. Phase II trials usually enrol fewer than 100 people but may include as many as 300. The people who participate in phase II trials may or may not have been treated previously with standard therapy for their type of cancer. If a person has been treated previously, their eligibility to participate in a specific trial may depend on the type and amount of prior treatment they received. Although phase II trials can give some indication of whether or not an intervention works, they are almost never designed to show whether an intervention is better than standard therapy.

Phase III (also called phase 3). These trials compare the effectiveness of a new intervention, or new use of an existing intervention, with the current standard of care (usual treatment) for a particular type of cancer. Phase III trials also examine how the side effects of the new intervention compare with those of the usual treatment. If the new intervention is more effective than the usual treatment and/or is easier to tolerate, it may become the new standard of care.

Phase III trials usually involve large groups of people (100 to several thousand), who are randomly assigned to one of two treatment groups, or "trial arms": (1) a control group, in which everyone in the group receives usual treatment for their type of cancer, or 2) an investigational or experimental group, in which everyone in the group receives the new intervention or new use of an existing intervention. The trial participants are assigned to their individual groups by random assignment, or randomisation. Randomisation helps ensure that the groups have similar characteristics. This balance is necessary so the researchers can have confidence that any differences they observe in how the two groups respond to the treatments they receive are due to the treatments and not to other differences between the groups.

Randomisation is usually done by a computer program to ensure that human choices do not influence the assignment to groups. The trial participants cannot request to be in a particular group, and the researchers cannot influence how people are assigned to the groups. Usually, neither the participants nor their doctors know what treatment the participants are receiving.

People who participate in phase III trials may or may not have been treated previously. If they have been treated previously, their eligibility to participate in a specific trial may depend on the type and the amount of prior treatment they received.

In most cases, an intervention will move into phase III testing only after it has shown promise in phase I and phase II trials.

Phase IV (also called phase 4). These trials further evaluate the effectiveness and long-term safety of drugs or other interventions. They usually take place after a drug or intervention has been approved by the medicine regulatory office for standard use. Several hundred to several thousand people may take part in a phase IV trial. These trials are also known as post-marketing surveillance trials. They are generally sponsored by drug companies.

Sometimes clinical trial phases may be combined (e.g., phase I/II or phase II/III trials) to minimize the risks to participants and/or to allow faster development of a new intervention.

Although treatment trials are always assigned a phase, other clinical trials (e.g., screening, prevention, diagnostic, and quality-of-life trials) may not be labelled this way.

Use of Placebos

The use of placebos as comparison or "control" interventions in cancer treatment trials is rare. If a placebo is used by itself, it is because no standard treatment exists. In this case, a trial would compare the effects of a new treatment with the effects of a placebo. More often, however, placebos are given along with a standard treatment. For example, a trial might compare the effects of a standard treatment plus a new treatment with the effects of the same standard treatment plus a placebo.

Possible benefits of taking part in a clinical trial

The benefits of participating in a clinical trial include the following:

- Trial participants have access to promising new interventions that are generally not available outside of a clinical trial.
- The intervention being studied may be more effective than standard therapy. If it is more effective, trial participants may be the first to benefit from it.
- Trial participants receive regular and careful medical attention from a research team that includes doctors, nurses, and other health professionals.
- The results of the trial may help other people who need cancer treatment in the future.
- Trial participants are helping scientists learn more about cancer (e.g., how it grows, how it acts, and what influences its growth and spread).

Potential harms associated with taking part in a clinical trial

The potential harms of participating in a clinical trial include the following:

- The new intervention being studied may not be better than standard therapy, or it may have harmful side effects that doctors do not expect or that are worse than those associated with standard therapy.
- Trial participants may be required to make more visits to the doctor than they would if they were not in a clinical trial and/or may need to travel farther for those visits.

Correlative research studies, and how they are related to clinical trials

In addition to answering questions about the effectiveness of new interventions, clinical trials provide the opportunity for additional research. These additional research studies, called correlative or ancillary studies, may use blood, tumour, or other tissue specimens (also known as 'biospecimens') obtained from trial participants before, during, or after treatment. For example, the molecular characteristics of tumour specimens collected during a trial might be analysed to see if there is a relationship between the presence of a certain gene mutation or the amount of a specific protein and how trial participants responded to the treatment they received. Information obtained from these types of studies could lead to more accurate predictions about how individual patients will respond to certain cancer treatments, improved ways of finding cancer earlier, new methods of identifying people who have an increased risk of cancer, and new approaches to try to prevent cancer.

Clinical trial participants must give their permission before biospecimens obtained from them can be used for research purposes.

When a clinical trial is over

After a clinical trial is completed, the researchers look carefully at the data collected during the trial to understand the meaning of the findings and to plan further research. After a phase I or phase II trial, the researchers decide whether or not to move on to the next phase or stop testing the intervention because it was not safe or effective. When a phase III trial is completed, the researchers analyse the data to determine whether the results have medical importance and, if so, whether the tested intervention could become the new standard of care.

The results of clinical trials are often published in peer-reviewed scientific journals. Peer review is a process by which cancer research experts not associated with a trial review the study report before it is published to make sure that the data are sound, the data analysis was performed correctly, and the conclusions are appropriate. If the results are particularly important, they may be reported by the media and discussed at a scientific meeting and by patient advocacy groups before they are published in a journal. Once a new intervention has proven safe and effective in a clinical trial, it may become a new standard of care.
(National Cancer Institute).

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Sources and References

Cancer Research UK
http://www.cancerresearchuk.org/about-cancer/type/penile-cancer/treatment/surgery/types-of-surgery-for-penile-cancer

DermNet.NZ
http://www.dermnetnz.org/site-age-specific/penile-intraepithelial-neoplasia.html

Male Reproductive System
http://www.webmd.com/men/picture-of-the-penis

National Cancer Institute
http://www.cancer.gov/about-cancer/treatment/clinical-trials/what-are-trials

Patient.co.uk
http://www.patient.co.uk/doctor/penile-cancer-pro

PathologyOutlines.Com
http://www.pathologyoutlines.com/topic/penscrotumPeIN.html

Penile Intraepithelial Neoplasia 1
https://www.google.co.za/search?q=penile+intraepithelial+neoplasia&biw=1517&bih=714&source=lnms&tbm=isch&sa=X&ei=SPMbVZn3D-WU7QabgIHIBw&sqi=2&ved=0CAYQ_AUoAQ&dpr=0.9#imgdii=_&imgrc=nzNGGgCMIer5TM%253A%3BqZxXFryG_kO9TM%3Bhttp%253A%252F%252Fstatic-content.springer.com%252Fimage%252Fart%25253A10.1007%25252Fs00105-009-1873-3%252FMediaObjects%252F105_2009_1873_Fig1_HTML.jpg%3Bhttp%253A%252F%252Flink.springer.com%252Farticle%252F10.1007%252Fs00105-009-1873-3%252Ffulltext.html%3B402%3B331

Penile Intraepithelial Neoplasia 2
http://journals.lww.com/humanandrology/Fulltext/2013/03000/Penile_intraepithelial_neoplasia___management_and.2.aspx

Seminars in Diagnostic Pathology
http://www.semdiagpath.com/article/S0740-2570%2811%2900108-0/abstract

WebMD
http://www.webmd.com/men/picture-of-the-penis