Cancer Association of South Africa (CANSA)

Research • Educate • Support

Fact Sheet on Paranasal Sinus and Nasal Cavity Cancer

Introduction

The word "paranasal" means near the nose. The paranasal sinuses are hollow, air-filled spaces in the bones around the nose. The sinuses are lined with cells that make mucus, which keeps the inside of the nose from drying out during breathing.

[Picture Credit: Nasal Cancer]

The space inside the nose is called the nasal cavity. This space warms, moistens and filters air as one breathes in. The bones around the nasal cavity have small hollow spaces in them called paranasal sinuses. These sinuses affect the sound and tone of one's voice.

The nose opens into the nasal cavity, which is divided into two nasal passages. Air moves through these passages during breathing. The nasal cavity lies above the bone that forms the roof of the mouth and curves down at the back to join the throat. The area just inside the nostrils is called the nasal vestibule. A small area of special cells in the roof of each nasal passage sends signals to the brain to give the sense of smell.
(MacMillan Cancer Support; National Cancer Institute).

Paranasal Sinus and Nasal Cavity Cancer

Cancer of the paranasal sinus and nasal cavity forms part of head and neck cancers.

The most common type of paranasal sinus and nasal cavity cancer is squamous cell carcinoma. This type of cancer forms in the squamous cells (thin, flat cells) lining the inside of the paranasal sinuses and the nasal cavity.

Other types of paranasal sinus and nasal cavity cancer include the following:

- Melanoma: Cancer that starts in cells called melanocytes, the cells that give skin its natural colour.

Researched and Authored by Prof Michael C Herbst
[D Litt et Phil (Health Studies); D N Ed; M Art et Scien; B A Cur; Dip Occupational Health; Dip Genetic Counselling; Diagnostic Radiographer; Dip Audiometry and Noise Measurement]
Approved by Ms Elize Joubert, Chief Executive Officer [BA Social Work (cum laude); MA Social Work]

- Sarcoma: Cancer that starts in muscle or connective tissue.
- Inverting papilloma: benign tumours that form inside the nose. A small number of these change into cancer.
- Midline granulomas: cancer of tissues in the middle part of the face.

(National Cancer Institute).

Incidence of Paranasal and Nasal Cavity Cancer

According to the National Cancer Registry (2013) the following number of cases of naso-oropharyngeal cancer was histologically diagnosed during 2013:

Group - Males 2013	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All males	275	1:533	0,77%
Asian males	5	1:959	0,63%
Black males	146	1:691	1,36%
Coloured males	37	1:397	0,88%
White males	87	1:327	0,43%

Group - Females 2013	Actual No of Cases	Estimated Lifetime Risk	Percentage of All Cancers
All females	100	1:2 152	0,27%
Asian females	4	1:1 275	0,40%
Black females	54	1:3 448	0,35%
Coloured females	13	1:1 640	0,31%
White females	29	1:1 050	0,18%

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

Group - Males 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	8	6	11	27	97	77	35	8
Asian males	0	0	0	0	3	2	0	0
Black males	6	6	8	9	55	31	14	4
Coloured males	0	0	2	4	10	14	4	1
White males	2	0	1	10	26	26	16	2

Group - Females 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 females	7	4	10	18	24	25	11	1
Asian females	0	0	0	0	3	0	1	0
Black females	7	4	7	11	11	9	3	0
Coloured females	0	0	2	3	3	3	1	0
White females	0	0	1	3	6	11	6	1

N.B. In the event that the totals in any of the above tables do not tally, this may be the result of uncertainties as to the age, race or sex of the individual. The totals for 'all males' and 'all females' , however, always reflect the correct totals.

Causes and Risk Factors for Paranasal Sinus and Nasal Cavity Cancer
The exact causes of nasal and sinus cancers are not known. It is more common in people who handle or breathe in certain chemicals or dust for many years because of their work environment or as a result of serious hobbies. These include wood dust, chromium, nickel, formaldehyde, leather dust and mineral oils.

Other factors that may increase the risk of nasal and sinus cancer include:

- smoking tobacco
- an infection caused by the human papilloma virus (HPV).

(MacMillan Cancer Support).

Signs and Symptoms of Paranasal Sinus and Nasal Cavity Cancer
In most cases, nasal and paranasal sinus cancers are found because of the symptoms they cause. Diagnosis in people without symptoms is rare and usually accidental (because of tests done to check other medical problems). Individuals with nasal cavity or paranasal sinus cancer often do not show any of these symptoms. In fact, these types of cancer are usually diagnosed in their later stages because early-stage cancer typically does not cause any symptoms. Nasal cavity or paranasal sinus cancer is often discovered when a person is being treated for seemingly benign, inflammatory disease of the sinuses, such as sinusitis.

Possible symptoms of these cancers include:

- Nasal congestion and stuffiness that does not get better or even worsens
- Pain above or below the eyes
- Blockage of one side of the nose
- Post-nasal drip (nasal drainage in the back of the nose and throat)
- Nosebleeds
- Pus draining from the nose
- Decreased sense of smell
- Numbness or pain in parts of the face
- Loosening or numbness of the teeth
- Growth or mass of the face, nose, or palate
- Constant watery eyes
- Bulging of one eye
- Loss or change in vision
- Pain or pressure in one of the ears
- Trouble opening the mouth
- A lump or sore inside the nose that does not heal
- Lymph nodes in the neck getting larger (seen or felt as lumps under the skin)

Having one or more of these symptoms does not mean one has nasal cavity or paranasal sinus cancer. In fact, many of these symptoms are more likely to be caused by other conditions (although with cancer they do not get better over time). Still, if one has any of these symptoms, it is important to have them checked out by a doctor so that the cause can be found and treated.
(American Cancer Society; Cancer.Net).

Diagnosis of Paranasal Sinus and Nasal Cavity Cancer
To make the diagnosis, a complete medical history and physical examination are necessary. During a physical examination, the doctor feels for any lumps on the neck, lips, gums, and cheeks. The doctor will also inspect the nose, mouth, throat, and tongue for abnormalities, often using a light and/or mirror for a clearer view.

Signs of nasal cavity and paranasal sinus cancer are often very similar to symptoms of chronic or allergic sinusitis. The physical examination is important, and doctors may perform one or more of the tests listed below to reach a diagnosis. There are no specific blood or urine tests that can be performed to help make an early diagnosis of either of these types of cancer.

In addition to a physical examination, the following tests may be used to diagnose nasal cavity or paranasal sinus cancer:

- Biopsy - a biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis. A pathologist then analyses the sample(s). A pathologist is a doctor who specialises in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease.

- Endoscopy – an endoscopy allows the doctor to see inside the body with a thin, lighted, flexible tube called an endoscope. The patient may be sedated as the tube is inserted through the mouth or nose to examine the head and neck areas. Sedation is the use of medication to help a person become more relaxed, calm, or sleepy. This examination has different names depending on the area of the body that is examined, such as laryngoscopy, which examines the larynx; pharyngoscopy, which examines the pharynx; or nasopharyngoscopy, which examines the nasal cavity and nasopharynx.

  In some cases, a diagnosis of paranasal sinus cancer will be made during endoscopic surgery for what is believed to be benign (non-cancerous) chronic sinusitis. Before completing the surgery, the surgeon should take a biopsy sample of healthy-looking tissue to confirm benign chronic sinusitis. This procedure is called a frozen section examination.

- X-ray - an X-ray is a way to create a picture of the structures inside of the body, using a small amount of radiation. An X-ray can show if the sinuses are filled with something other than air. If they are, the issue is usually not cancer but, instead, an infection that is treatable. If treatment does not work to clear the sinuses, then other more specialised X-ray tests may be done to identify the blockage. Signs of cancer on an X-ray may be followed up with a computed tomography scan, also called a CT scan.

- Computed Tomography (CT or CAT) scan - a CT scan creates a 3-dimensional picture of the inside of the body using X-rays taken from different angles. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumours. A CT scan can also be used to measure the tumour's size. Sometimes, a special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a liquid to swallow. CT scans are very useful in identifying cancer of the nasal cavity or paranasal sinus.

- Magnetic Resonance Imaging (MRI) – an MRI uses magnetic fields, not X-rays, to produce detailed images of the body, especially images of soft tissue, such as the eye in its socket and the part of the brain near the sinuses. An MRI can also be used to measure a tumour's size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a pill to swallow.

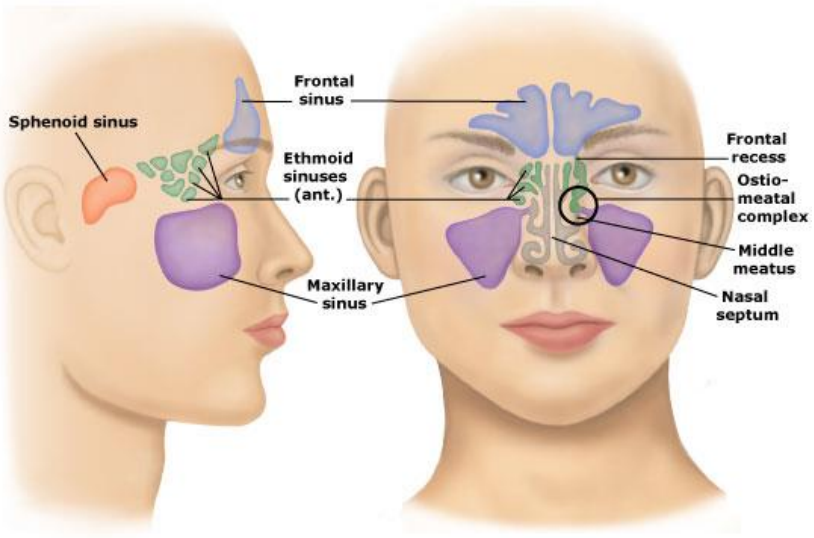
- Bone scan – a bone scan may be done to see if cancer has spread to the bones. A bone scan uses a radioactive tracer to look at the inside of the bones. The tracer is injected into the patient's vein. It collects in areas of the bone and is detected by a special camera. Healthy bone appears grey to the camera, and areas of injury, such as those caused by cancer, appear dark.

- Positron Emission Tomography (PET) or PET-CT scan - a PET scan is usually combined with a CT scan (see above), called a PET-CT scan. However, one may hear the doctor refer to this procedure just as a PET scan. A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive sugar substance is injected into the patient's body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body.

After diagnostic tests are done, the doctor will review all of the results with the patient. If the diagnosis is cancer, these results also help the doctor describe the cancer. This is called staging.
(Cancer.Net).

Treatment of Paranasal Sinus and Nasal Cavity Cancer
Before treatment can be commenced with, it is important to stage the cancer. Stage means how far the cancer has grown. Stage matters because it plays a large part in deciding on treatment. Doctors will base their treatment decisions for nasal cavity and paranasal sinus cancers on the type and location of the tumour and its stage.

[Picture Credit: Nasal and Paranasal Sinuses]



Treatment by stage for maxillary sinus cancer

Treatment of maxillary sinus cancer is dependent on the stage of the cancer.

Stage1 – if a patient has stage 1 maxillary sinus cancer, he/she is most likely to have surgery. The operation, called a maxillectomy. It involves removing the bone and tissue from the maxillary sinus. The patient may need to have radiotherapy after surgery to destroy any cancer cells that may still be there. He/she may need this if the surgeon:

- Could not remove all the tumour or
- Could not remove a large enough margin of healthy tissue from around the tumour

Stage 2 – if the patient has stage 2 maxillary sinus cancer, he.she is most likely to have either:

- Surgery alone (maxillectomy) or
- Radiotherapy before or after surgery

If he/she has either stage 1 or 2 maxillary sinus cancer and he/she is not fit enough to have surgery, they will probably have radiotherapy alone.

Stage 3 - treatment for stage 3 maxillary sinus cancer is surgery (radical or extended maxillectomy) and radiotherapy. One may have the radiotherapy before or after surgery.
Some people have radiotherapy or chemotherapy to shrink the cancer before surgery. This makes it easier for the surgeon to remove the cancer. One may hear this called neo adjuvant treatment.

If the cancer has spread to the lymph nodes, one will need an operation called a neck dissection or radiotherapy to get rid of any cancer cells in this area.

Stage 4 – radiotherapy is usually the treatment for stage 4 maxillary sinus cancer. If the sinuses are very blocked one may have surgery to relieve this before radiotherapy. But this will not completely remove the cancer.

Treatment by stage for ethmoid sinus cancer

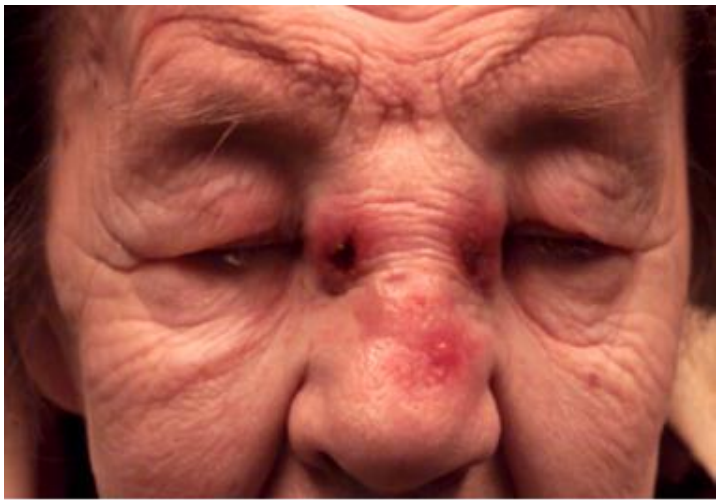
Using surgery to treat ethmoid sinus cancer is sometimes difficult. This is because these sinuses are very close to the eye sockets and the base of the skull. Operations tend to be more extensive than those for maxillary sinus cancer.

Stage 1 and 2 – if one has a small stage 1 or 2 ethmoid cancer, the doctor may be able to completely remove it with an operation called an ethmoidectomy. But one is more likely to have radiotherapy for these early stage cancers. This works just as well as surgery.

Stage 3 and 4 - if one has stage 3 or 4 ethmoid sinus cancer, one will have a combination of craniofacial surgery and radiotherapy. Patients will have the radiotherapy either before or after surgery.

Treating sphenoid sinus cancer

Because of where these sinuses are, they are very difficult to get to during surgery. Doctors will usually use radiotherapy to treat these cancers.



Treating nasal cavity cancer

If one has cancer of the nasal cavity treatment will depend on where the tumour is and its stage. If the cancer is in the tissue separating the two sides of the nose (the nasal septum) one will most likely have surgery.

[Picture Credit: Nasal Cavity Cancer]

For cancers elsewhere in the nasal cavity, radiotherapy works just as well as surgery. It is often the preferred treatment because it does not change the appearance of the nose as much as surgery. If the cancer is very advanced, the doctor may suggest both treatments, with radiotherapy before or after surgery.

Treating other types of nasal cavity and paranasal sinus cancer

This includes lymphomas, sarcomas and melanomas. Treatment for lymphomas of the nasal cavity and paranasal sinuses is the same as for other types of lymphoma.

If one has a melanoma or sarcoma of the nasal cavity or paranasal sinuses, one will most likely have surgery.

Treatment if the cancer comes back

Treatment depends on where the cancer has come back and the treatment one had first time round. The doctors may choose a different treatment from what one had before. Unfortunately, once a nasal or sinus cancer has come back, it is not usually possible to cure it. But treatment can help to relieve symptoms.

If one had radiotherapy to treat maxillary or ethmoid sinus cancer or nasal cavity cancer the first time round, then this time the patient may have craniofacial surgery.

If one previously had surgery, this time one will have radiotherapy. If radiotherapy or surgery does not help, one may then have chemotherapy.

If the cancer has come back in the sphenoid sinuses one may have chemotherapy.
(Cancer Research UK).

Overall Statistics for Nasal Cavity and Sinus Cancers

Of all the people diagnosed with nasal cavity and paranasal sinus cancer, between 35 and 60 out of every 100 (35 to 60%) will survive for 5 years or more after they are diagnosed. But this is an overall statistic, and the outlook for each person will depend very much on where the cancer is, the type, how far it has spread, and how fast it is growing. Generally, cancer of the nasal cavity has a better outcome than paranasal sinus cancer.

If the cancer is caught very early, the outlook is very good. Nearly everyone diagnosed with a very early stage cancer of the nasal cavity or paranasal sinuses will survive for 5 years or more after diagnosis. But sadly, for very advanced stage tumours the statistics are not so good. Only between 20 and 30 out of every 100 people (20 to 30%) diagnosed with advanced stage cancers will survive for 5 years or more after their diagnosis.
(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.

<u>Use of Placebos</u>

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).

Medical Disclaimer

This Fact Sheet is intended to provide general information only and, as such, should not be considered as a substitute for advice, medically or otherwise, covering any specific situation. Users should seek appropriate advice before taking or refraining from taking any action in reliance on any information contained in this Fact Sheet. So far as permissible by law, the Cancer Association of South Africa (CANSA) does not accept any liability to any person (or his/her dependants/estate/heirs) relating to the use of any information contained in this Fact Sheet.

Whilst CANSA has taken every precaution in compiling this Fact Sheet, neither it, nor any contributor(s) to this Fact Sheet can be held responsible for any action (or the lack thereof) taken by any person or organisation wherever they shall be based, as a result, direct or otherwise, of information contained in, or accessed through, this Fact Sheet.

Sources and References

American Cancer Society
https://www.cancer.org/cancer/nasal-cavity-and-paranasal-sinus-cancer/detection-diagnosis-staging/signs-symptoms.html

Cancer.Net
http://www.cancer.net/cancer-types/nasal-cavity-and-paranasal-sinus-cancer/symptoms-and-signs

Cancer Research UK
http://www.cancerresearchuk.org/about-cancer/type/nasal-cancer/treatment/types/treatment-by-stage-for-nasal-and-sinus-cancer
http://www.cancerresearchuk.org/about-cancer/type/nasal-cancer/treatment/statistics-and-outlook-for-nasal-cavity-and-paranasal-sinus-cancer

MacMillan Cancer Support
http://www.macmillan.org.uk/information-and-support/head-and-neck-cancers/paranasal-sinus-cancer#282910

Nasal and Paranasal Sinuses
https://uk.pinterest.com/explore/paranasal-sinuses/

Nasal Cancer
https://www.123rf.com/photo_29763107_open-hand-raised-nasal-cancer-sign-painted-multi-purpose-concept--isolated-on-white-background.html

Nasal Cavity Cancer
http://emedicine.medscape.com/article/846995-overview

National Cancer Institute
https://www.cancer.gov/types/head-and-neck/patient/paranasal-sinus-treatment-pdq
http://www.cancer.gov/about-cancer/treatment/clinical-trials