

# Screening for Colorectal Cancer

## Incidence

Colorectal cancer is the 2nd commonest cancer in males (after prostate) and in females (after breast). In our environment, the incidence of this disease is approximately 1:40 (1:24 in Australia). There is very little difference in incidence between sexes, although it is slightly more common in men.

## Age and sex

The peak incidence is between 55-70 years, but there is a trend to a gradual lowering of the age of entry to this peak incidence. By comparison, the incidence of prostate cancer peaks 10-20 years later. Thus colorectal cancer represents the biggest cancer threat in the employment-aged population.

## Why screen

This cancer passes through a long precancerous polyp phase, providing an ideal target for interventional screening. This polyp-cancer sequence takes between 3-10 years, making 5 years a viable screening interval for normal risk patients. If a polyp is found, the follow-up screening interval is usually reduced to 3-5 years.

Screening has been shown both to reduce the incidence of the disease and to downstage the tumour at diagnosis.

A study from the NEJM, published in 2002, demonstrated a very low yield from screening in patients between 40-49 years.

There are no quality data to support a particular screening interval or age of entry.

## Impact of screening

At presentation approximately 50% of colorectal cancer patients are incurable with either metastatic or advanced local disease. Only 10% are Dukes' A stage with a >90% cure rate. Screening has been shown to impact favourably on both of these statistics.

Polyps and early cancers are rarely symptomatic unless they are in the rectosigmoid when bleeding is sometimes evident. A change in bowel habit is a late symptom. Colorectal cancer is a good example of a "silent cancer". This explains the discouraging prognostic statistics at the time of diagnosis.

## Screening tools

These include faecal occult blood testing, rigid sigmoidoscopy, flexible sigmoidoscopy and colonoscopy.

**Faecal occult blood testing** has a low sensitivity and even lower specificity with high false positive and false negative rates. It may have a role in mass population screening, but requires significant administrative support.

**Rigid sigmoidoscopy** is very uncomfortable when passed through the rectosigmoid junction to 20cm, and is usually abandoned at about 13-15 cm. It screens only the rectum and distal sigmoid colon. If a lesion is seen, the patient requires colonoscopy.

**Flexible sigmoidoscopy** has the virtue of only an enema preparation and no sedation. It is less uncomfortable and has been shown to have greater patient acceptability than rigid sigmoidoscopy. However, the scope is seldom passed beyond the proximal sigmoid (50-60 cm). If a polyp is found, full colonoscopy is necessary to screen the rest of the colon.

**Colonoscopy** is the gold standard. It has a specificity and sensitivity over 90% and allows immediate intervention with polypectomy or tumour



Colon cancer



Colon polyp

biopsy. No other screening tool has these virtues, eg mammography, cervical smear or tumour markers. It has a perforation rate of approximately 1:2000 making it safe. Its drawbacks are the need for sedation and reluctance patients have for an investigation perceived as undignified. However, acceptability has been substantially increased by a number of factors including: improved preparation salts, better conscious sedation, improved scopes and the change from a hospital based to an office based procedure. Population awareness from the media (eg TIME magazine) has reduced the fear and mystique of this procedure.

**Virtual (CT/MRI scan) colonoscopy** remains problematic, more expensive and less accurate. It is unreliable for polyps smaller than 5mm. It also requires a more demanding bowel preparation and if any polyps or other lesions are demonstrated a colonoscopy is needed. More time and refinement with good comparative studies are required. At present no national body is recommending it for screening.

## Recommendation

**Our recommendations reflect guidelines published by several international colo-rectal organisations.**

**The first colonoscopy should be between at about 50 years.**

**If no disease is found and there is no family history, then a subsequent examination can be advised 7-10 years later.**

**Patients who have a first degree relative who developed colorectal carcinoma at a young age (<60yrs) should have the first colonoscopy 10-15 years before the age of onset in the index relative.**

# SURGCARE UPDATE

## Screening When and Why

Dr Jeffery & Partners

www.surgcare.co.za

## Screening for Breast Cancer

Screening for breast cancer requires examining or testing for the early stages of the disease when there are no symptoms using several methods.



### Breast self examination (BSE)

This alone does not reduce death from breast cancer but may result in earlier detection.

### Clinical breast examination (CBE)

Performed by the healthworker, this should be done in conjunction with mammography, ultrasound and BSE.

### Mammography and ultrasound

Are the most useful investigations for screening allowing the diagnosis of small (good prognosis) tumours. The usefulness of mammography is age dependant.

40-45 - There is controversy. There is some evidence of benefit

45-59 - Mammographic screening reduces the risk of dying from breast cancer. Screening is strongly indicated.

Over 70 - There are very few studies to give guidance but the benefit of screening is doubtful.

A breast lump and breast pain constitute over 80% of the breast problems that require referral.

When a patient presents with a breast problem the basic question for the general practitioner is, "Is there a chance that cancer is present? If not, can I manage these symptoms myself?"

### ASSESSMENT

Triple assessment represents "best practice" when evaluating a suspicious breast lump.

### The three components are:

Clinical diagnosis	Mammography	Ultrasound scan
Imaging	Cytology	Histology
Pathology		

This may seem obvious, but it is frequently *not applied*.

### Clinical diagnosis

There is no justification for a purely clinical diagnosis of breast cancer. The majority presenting with breast cancer complain of a lump.

Up to 15% will present with a more diffuse process. This is particularly common with lobular carcinoma.

Clinical assessment may often be inaccurate especially in the axilla where nodal status is wrongly assessed in up to 50% of cases.

### Mammography

This should be mandatory even in the presence of an obvious breast lump. It is not only of diagnostic importance, but detects multicentricity and multifocality, assesses the opposite breast and provides a baseline for future comparative evaluation. However it is only 85-90 per cent accurate. Because breasts are radiodense in women under 40yrs, ultrasound may be more useful in this group.

### Fine needle aspiration biopsy (FNAB)

FNAB allows cytological examination of any lump. A diagnosis of fibroadenoma or "cystic change" without such confirmation is ill advised.

FNAB has the advantage of being an office procedure.

Needle aspiration can differentiate between solid and cystic lesions.

### Needle localisation & biopsy

When a mammographic abnormality is impalpable, a needle wire can be placed under radiological guidance to guide the surgeon. The tissue around the wire hook is excised and submitted for histology.

Open biopsy should be performed only in patients who have been appropriately investigated by imaging, FNAB cytology and possibly, core biopsy.

### When and whom to screen

**All 'at risk' women with a family history when 40 yrs old or 10 yrs before the onset of the disease in the 'index' relative.**

**Every year in 'at risk' women**

**All women once at 40 years and every two years thereafter**

## Screening for Aortic Aneurysms

Four large studies randomly assigned patients to U/S AAA screening or not. Screened patients had lower rates of dying of a ruptured AAA than unscreened patients, but overall rates of death from all causes were similar in both groups.

AAA was much more common in men than in women and was most common in male smokers. Of all patients dying of AAA rupture, 95% are older than age 65 years. Future death from AAA rupture is rare after negative results on ultrasonography at age 65 years.

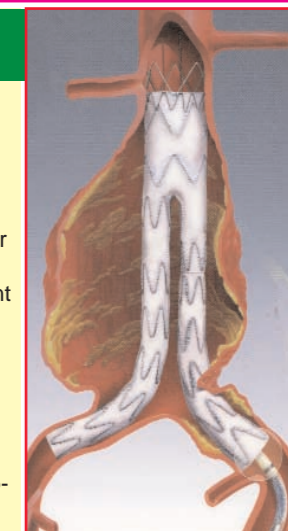
Repair improved outcomes for patients with aneurysms larger than 5.5 centimeters. Screening can cause short-term anxiety, but the authors found no long-lasting psychological side effects from ultrasonography. However, complications occur in up to about 30% of patients who have AAA repair,

and about 4% die before leaving the hospital after AAA repair.

Men who have ever smoked (current and former smokers) should get ultrasonography once between ages 65 to 75 years to look for AAA. There is no recommendation either for or against AAA screening for men who have never smoked. This is still an individual decision to be made between patient and doctor.

Women do not need to undergo ultrasonographic screening for AAA.

Ultrasonography to look for AAA is indicated in any patient with abnormal findings on medical examination or with symptoms that might be due to an AAA.



# Screening for Oesophageal Cancer - Barrett's metaplasia

**Barrett's Oesophagus** is a pre-malignant condition in which the **normal squamous epithelium** of the distal oesophagus is replaced by **intestinal metaplastic columnar epithelium**. This complication occurs in 10-20% of GORD patients. Almost all oesophageal adenocarcinomas arise in areas of Barrett's oesophagus. The incidence of this cancer has overtaken squamous cancer in developed countries, but it remains a relatively uncommon cancer. The cancer risk from Barrett's is probably no more than 1% per year.

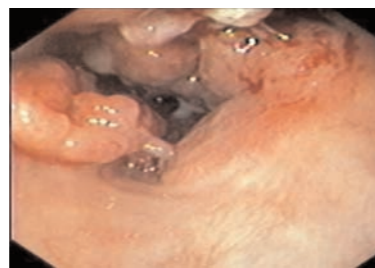
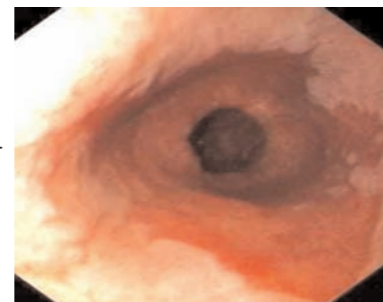
Previously, definitions of Barrett's oesophagus required a length of 3cm of intestinal metaplasia. However, dysplastic changes and cancer have been associated with single or multiple finger-like protrusions of intestinal metaplastic epithelium, 1-3 cm long, so-called Short Segment Barrett's (SSBE).



Protrusions < 1 cm long are sometimes called Ultra-short segment Barrett's (USSBE).

The diagnosis and accurate assessment of this condition is complex because of confounding variables like hiatal hernia, erosions and observer variability and requires experienced endoscopic examination and biopsy.

Surveillance requires multiple mapped biopsies to detect dysplasia as the dysplastic mucosa is endoscopically indistinguishable from non-dysplastic Barrett's mucosa.



Long term surveillance is controversial in SSBE and USSBE, but is still advised with more extensive disease. When high grade dysplasia is present, consideration should be given to prophylactic oesophagectomy and there is sometimes cancer already present as shown here.

# Screening for Carotid Artery Disease

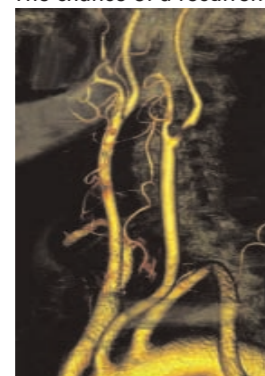
Stroke is the third leading cause of death in the western world. The incidence of stroke increases with advancing age and is 1.5 x greater in men compared to women of the same age.

The aetiology of stroke is multifactorial. Ischaemic stroke accounts for 80% of all first-ever strokes. Of these approximately 30% are cardio-embolic in origin. This is estimated to reach 50% in patients younger than 40 years old.

**Atherosclerotic changes of the major extracranial and intracranial cerebral blood vessels account for 20-30% of ischaemic strokes**, while 40% of acute strokes

stroke, 10% die of a subsequent stroke and 18% die of complications of coronary artery disease.

The chance of a recurrence within the 1<sup>st</sup> year of the initial stroke was 10%. The mortality with the 1<sup>st</sup> recurrence was 35%, but the mortality rate for subsequent recurrences in survivors was 65%. The study also showed that patients who suffer a transient ischaemic attack have a 10% incidence of recurrent stroke in the 1<sup>st</sup> year.



## Can Carotid Intervention Prevent Strokes in Symptomatic Patients?

The American NASCET and European ECST are two large prospective multicentre randomised controlled trials that examined the benefit of carotid endarterectomy vs best medical therapy in patients who presented with a TIA or stroke.

### Risk of ipsilateral stroke

	NASCET		ECST	
	Surgical	Medical	Surgical	Medical
70-99%	9.0%	26.0%	2.8%	16.8%
50-69%	15.7%	22.2%		
<50%	No benefit		No benefit	

**Both came to similar conclusions.**

Patients with a > 70% symptomatic stenosis have an absolute risk reduction of ipsilateral stroke of 14-17% with a relative risk reduction of 65-83% in favour of surgery. Only 6-7 pts patients need to be treated over 2 years to prevent 1 stroke.

The degree of stenosis correlated profoundly with the risk of stroke. Patients with 50-69% symptomatic stenosis had less benefit (15 patients need treatment to prevent 1 stroke), whilst patients with < 50% stenosis fared better with medical treatment.

### Asymptomatic Patients:

4% of adults have an asymptomatic carotid bruit. An asymptomatic bruit has a low annual risk of stroke of 1.5% per year. The risk of stroke increases with an increasing degree of stenosis.

An argument in favour of prophylactic repair of asymptomatic lesions is based on a review of stroke patients which found that only 30-50% of patients reported a TIA prior to a stroke. This implies that up to half of patients went from an asymptomatic lesion one day to a stroke the next.

### Can Carotid Intervention Prevent Stroke in Asymptomatic Patients?

Two large randomised controlled trials (ACAS and ACST) examined whether carotid endarterectomy offered any benefit over best medical therapy. They both found similar results with a **relative risk reduction for operated patients of approximately 50% in those with a stenosis >60%** with an absolute risk reduction of 5.4-5.9%.

This means that 19 patients need surgical treatment to prevent 1 stroke.

The benefit was less in women and in patients older than 75 years old. Patients also needed a life expectancy > 4 years to derive benefit.

### Take home message

**Screening with a carotid duplex scan is indicated in:**  
 Male patients with an asymptomatic carotid bruit.  
 All patients presenting with a TIA  
 All patients with PAD or CAD  
 Patients who recovery early and progressively from a stroke

# Screening for Peripheral Arterial Disease

## Why Screen For Arterial Disease?

Peripheral arterial disease (PAD) is the most common manifestation of systemic atherosclerosis. Symptoms range from pain on exertion relieved by rest (claudication) to pain at rest and/or tissue loss.

2-3% of men and 1-2% of women >60 years old have symptoms of claudication and up to 20% of people >70 years old have PAD. Only 1 in 4 patients complain of increasing symptoms over time. Less than 20% of patients require revascularization at 10 years and the amputation rate is <7% at 10 years. The prognosis is poor if the ankle-brachial index is low, if the patient continues to smoke, has diabetes or is on dialysis.

The most important implication of PAD is that it serves as a strong surrogate marker for atherosclerotic disease in other vascular beds. Regardless of whether or not there are symptoms, patients with PAD have an increased risk of subsequent myocardial infarction or stroke and are 6 times more likely to die in 10 years than patients without PAD. The 5 year mortality rate is 50% in patients with claudication and 70% in patients with critical limb ischaemia.

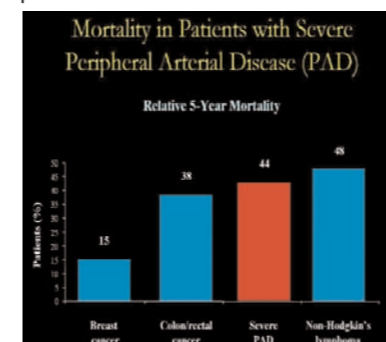


Figure 1 illustrates the relative 5 year mortality compared to some common cancers. The cause of death is rarely a direct result of the lower extremity arterial disease itself.

About 55% of patients with PAD die from complications related to coronary artery disease, 10% from complications of cerebrovascular disease, and 25% die of non-vascular causes. Less than 10% die from other vascular events, most commonly a ruptured aortic aneurysm.

In patients with PAD the prevalence of clinical coronary artery disease ranges from 20-60% when based on coronary angiography this increases to about 90%. Cerebrovascular disease is present in 40-50%.

## How Should patients be Screened?

The diagnosis of PAD is often overlooked in routine physical examinations. In patients complaining of claudication, such

complaints are often attributed to growing old, arthritis or muscular pain. Physician and patient apathy, misconceptions and lack of awareness concerning the morbidity and mortality associated with PAD leads to less intensive treatment of risk factors and a loss of the opportunity for secondary prevention of atherosclerotic events. A comprehensive patient history and examination is the first step in the evaluation of a patient with suspected PAD.

Physical examination includes measurement of blood pressure, palpation of pulses (bilaterally), auscultation for bruits, and examination of the skin for features of chronic ischaemia (shiny atrophic skin, hair loss, thickened nails, pallor, temperature). Once PAD is suspected, further non-invasive testing is required to confirm the diagnosis and to stratify the risk in these patients.

## Non invasive testing

The ankle-brachial index (ABI) is a simple, inexpensive, non-invasive tool that correlates well with angiographic disease severity and functional symptoms. It is derived by dividing the maximum ankle systolic pressure by the brachial systolic pressure. The normal value is between 1 and 1.3. Mild disease correlates with an ABI from 0.70 to < 0.90, moderate disease from 0.40 to < 0.70 and severe disease an ABI of less than 0.40. The ABI is well established as an independent predictor of cardiovascular morbidity and mortality.

The incidence of ischaemic stroke is inversely related to ABI, with the rate of stroke in patients with an ABI less than 0.80 approximately 5 x greater than in patients with an ABI > 1.20.

## Secondary Prevention: Targets

Zero smoking  
 Physical activity - at least 210 minutes a week  
 BP < 140/90 (130/80 in diabetics)  
 Cholesterol < 5 mmol/l, LDL < 3 mmol/l, HDL > 1 mmol/l, TG < 2 mmol/l, HbA1c 6.5% in diabetics  
 BMI < 25

## Take home message - screen all patients for PAD

PAD is a marker for coronary and cerebro-vascular disease.  
 Incidence of MI, stroke and vascular death are related to the severity of PAD.  
 Early detection of (often asymptomatic patients) with PAD allows for risk factor management and secondary prevention.

# Investigation of Fe Deficiency Anaemia (IDA)

The British Society of Gastroenterology BSG publishes evidence based guidelines for many GI conditions available to all on the web at [www.bsg.org.uk](http://www.bsg.org.uk)

## Introduction

IDA has a prevalence of 2-5% among adult men and post-menopausal women in the developed world. It is often multifactorial. While menstrual loss is the commonest cause of IDA in pre-menopausal women, blood loss from the GI tract is the commonest cause in men and post-menopausal women. Asymptomatic gastric and colon cancers may present with asymptomatic IDA, and seeking these conditions is a priority in patients with IDA.

**Commonest causes:** Menstruation 20-30%, NSAID/aspirin use 10-15%, Colon Ca 5-10%, Gastric Ca 5%, Peptic ulcer 5%, Angiodysplasia 5%, Blood donation 5%

## Recommendations of the BSG

Rectal examination and urinalysis,  
 Gastroscopy and colonoscopy in all male and post menopausal female patients.  
 Small bowel studies are not indicated unless IDA is transfusion dependent.  
 Faecal occult blood alone is of no benefit in the investigation of IDA.  
 Any level of anaemia should be investigated in the presence of iron deficiency.

# What's new at Jeffery & Partners



**Dr Jeffery and Partners** are pleased to announce that in March 2007 **Danie Theunissen** joined their General Surgical Practice.



Danie is the son of Kosie Theunissen, whom many would remember as a senior surgeon in Cape Town. He matriculated from Paarl Boys High School in 1983 and graduated with an MBChB from the University of Stellenbosch in 1989. After graduating he worked as intern and medical officer at Victoria Hospital in Wynberg before completing his post-graduate surgical training at Groote Schuur Hospital in 1998. He was a member of the local and national Registrars Committee as well as being the representative of the registrars on the Association of Surgeons executive committee.

He was appointed as Senior Specialist Surgeon at 2 Military Hospital in Wynberg in 1999 and was later appointed Chief Specialist and Head of Surgery in 2002. At 2 Military Hospital he headed a very busy surgical department gaining broad experience in all aspects of general surgery. He had the opportunity to be actively involved in clinical research and the training of Surgical Registrars from Groote Schuur Hospital.

He has been author and co-author of six papers in peer review journals and has presented at 12 national and international meetings. His other interests are information technology and painting.