

Cancer Screening Programmes

CANCER RESEARCH UK



cervical screening results

EXPLAINED

Clare Bankhead

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a guide for primary care

An updated and revised version of
cervical smear results EXPLAINED: a guide for primary care



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website, as follows:

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FOREWORD

This booklet presents the possible cervical screening outcomes and explains what they mean and the recommended action to be taken in each case.

The Papanicolaou smear test is the most commonly used cervical screening method in England (and Wales). Technologies are developing, particularly in Liquid Based Cytology (LBC) and Human Papillomavirus (HPV) testing, which will effect the proportions of the screening outcomes. Specifically, LBC is likely to reduce the proportion of inadequate cervical samples and HPV testing may aid in management decisions in women with borderline or mildly dyskaryotic results.

The impact of both these emerging technologies are dealt with in the appendices.

We would like to thank Julietta Patnick and Jane Johnson for their invaluable advice and comments on previous drafts.

2003



PREFACE TO THE FIRST EDITION OF CERVICAL SMEAR RESULTS EXPLAINED: A GUIDE FOR PRIMARY CARE

The purpose of these guidelines is to provide general practitioners with an easy reference for interpreting cervical screening results and taking appropriate action where indicated.

The preliminary draft of these guidelines was drawn up by a working group set up by the Cancer Research Campaign and chaired by Dr Joan Austoker. The membership of the group was:

Chris Brown
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Clare Wilkinson
Chris Williams

The draft was circulated to over one hundred general practitioners to seek their views, both on the content and format of the guidelines. Important changes were made to the guidelines in the light of the views of the general practitioners. We would like to thank all these general practitioners, many of whom gave considerable time to considering the guidelines and provided us with detailed comments to aid us in the revision.

The revised draft was then sent to Dr Amanda Herbert, Consultant Cytologist, Southampton General Hospital and Julietta Patnick, National Coordinator, NHS Cervical Screening Programme, to ensure that it was consistent with the most recent developments in cervical cytology and with current NHSCSP policy.

Their recommendations have been incorporated into the guidelines and we are grateful to both of them for their valuable advice and support.

1997

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INTRODUCTION

Patient distress associated with cervical screening and recall can be reduced by providing information at all stages of the screening process.

Before taking a cervical sample all women should have explained to them:

- The condition cervical screening will detect, ie precancerous lesions.
- When and how results will be made available.
- Likelihood of a normal result (about 90%).
- A normal result implies low risk, not no risk.
- Meaning of being recalled:
 - a) an inadequate/unsatisfactory cervical sample
 - b) an abnormal result.
- The vast majority of women recalled do not have cancer, any disease detected is treatable.
- If any abnormal or unexplained vaginal bleeding occurs, a woman should see her doctor, despite the recency of a negative screen.
- The risks and benefits of screening should be explained. Refer to the national leaflet 'Cervical screening: THE FACTS'.

Note

Each woman should receive a written statement of her result, whether it is normal (ie negative) or abnormal.

Mechanisms should be in place to ensure this happens, in particular to ensure that address details are correct at the time of the test.

The term 'negative' is used to describe a sample on which no nuclear abnormalities have been identified. The term 'normal' should be used to inform the woman of her screening result.



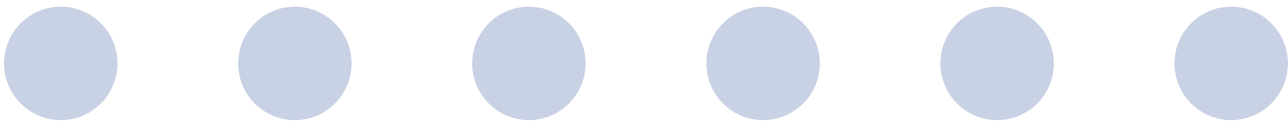
When referring women for colposcopy all women should have explained to them:

- The procedure of colposcopy. *See page 17*
- Possible embarrassment due to the lithotomy position.
- The possibility of a cervical biopsy.
- That treatment may occur with the initial examination.
- Likely treatment options.
- A leaflet about colposcopy should be given to women at the time of referral. A national leaflet is available. *See page 26.*

Note

A woman with a clinically suspicious cervix should be referred for colposcopy regardless of her screening result.

GPs and practice nurses should be familiar with the type of treatments offered locally.



RESULT **NEGATIVE**

EXPLANATION

No nuclear abnormalities identified.

ACTION

Ensure the patient is informed of the result.
The term 'normal' should be used to inform the woman of her screening result.
Recall as and if appropriate – see below.

Recall protocol for negative screening results

Patient's history

No previous cervical screening history

Previous screening results negative

Women aged 65* and over with no previous negative screening history

Previous abnormal screening

Previously treated for CIN

Previous CIN1
(not treated)

Recall interval

Routine recall

Routine recall

Three negative tests, 3 years apart then no further recall

For minor abnormalities (borderline and mild dyskaryosis) follow protocol for the particular abnormality

See pages 11 and 12

Follow up protocol for patients treated for CIN

See pages 20 and 21

At least 3 negative tests, 6-12 months apart then routine recall

*Women over 60 years in Scotland



RESULT INADEQUATE

EXPLANATION

About 9% of all conventional smears are inadequate.

Insufficient or unsuitable material present.

Inadequate fixation of smears.

Poor spreading of smears.

Smear consisted mainly of blood and pus or inflammatory exudate.

Excessive cytolysis may render samples unsuitable.


ACTION

Repeat sample immediately after treating any infection or atrophy, preferably within 3 months.

Repeat sample as soon as convenient if technically inadequate.

If persistent (3 inadequate samples), advise assessment by colposcopy.

The rate of inadequate results may reduce if Liquid Based Cytology (LBC) is introduced. See **Appendix 1**.



RESULT **NEGATIVE**

but with incidental observations

EXPLANATION

No nuclear abnormalities present.

Incidental observations include vaginal infections without evidence of dyskaryosis or borderline nuclear change.

ACTION

Investigate and manage infection as appropriate.

Ensure patient is informed of the result whilst being aware of the social consequences of a diagnosis of a sexually transmitted disease. The woman may not be aware that this result may be reported as a consequence of cervical screening.

If asymptomatic, the woman may not be expecting a report of a possible infection.

Recall if and as appropriate for a negative result.

See page 8

RESULT BORDERLINE NUCLEAR ABNORMALITY

EXPLANATION

Approximately 5% of all samples show borderline nuclear change or mild dyskaryosis.

Nuclear changes that cannot be described as normal.

Samples in which there is doubt as to whether or not the nuclear changes reflect true dyskaryosis.

Borderline nuclear change is most often reported in the presence of HPV type changes.

From this:

- The majority of women with borderline results will have ensuing samples that revert to normal.
- Those who do not should be managed appropriately (see action) and are **highly unlikely** to develop cervical cancer.

ACTION

Repeat sample within 6 months for changes bordering on mild dyskaryosis particularly in association with HPV. **The majority of smears will return to normal by this stage.**

If there is an associated treatable condition, treat and repeat screen at no more than 6 months.

If changes persist (3 borderline results) refer for colposcopy.

Three consecutive negative results, 6 months apart, required before returning to routine recall.

Repeat sample in 3-6 months when the differential diagnosis is between benign/reactive changes and higher degrees of dyskaryosis or ?glandular neoplasia, the laboratory may recommend a repeat screening in a shorter interval, or that gynaecological referral should be considered.

If in a 10 year period there are 3 borderline or more severe results, refer to colposcopy.

See also Appendix 2.

RESULT MILD DYSKARYOSIS**EXPLANATION**

Approximately 5% of all samples show borderline nuclear change or mild dyskaryosis.

Nuclear abnormalities reflecting probable CIN1 (ie low grade CIN). Mild dyskaryosis is often associated with HPV.

From this:

- The majority of women with mild dyskaryosis will have ensuing results that revert to normal.
- Those who do not should be managed appropriately (see action) and are **highly unlikely** to develop cervical cancer.

ACTION

Repeat sample in 6 months. **Many will have returned to normal by this stage.**

Refer for colposcopy if changes persist on 2 occasions.

If a single mild dyskaryotic result is obtained after treatment for CIN2 or worse, refer for colposcopy.

Three consecutive negative results, 6 months apart, required before returning to routine recall.

If in a 10 year period there are 3 borderline or more severe results, refer to colposcopy.


RESULT **MODERATE DYSKARYOSIS****EXPLANATION**

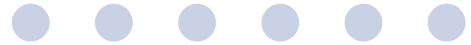
Approximately 1% of all samples show moderate dyskaryosis.

Nuclear abnormalities reflecting probable presence of CIN2 which should be managed as suspected high grade CIN.

ACTION

Refer for colposcopy.



**RESULT** SEVERE DYSKARYOSIS**EXPLANATION**

Approximately 0.5% of all samples show severe dyskaryosis.

Nuclear abnormalities reflecting probable presence of CIN3 (high grade CIN).

ACTION

Refer for colposcopy.




RESULT SEVERE DYSKARYOSIS ?INVASIVE CARCINOMA**EXPLANATION**

Less than 0.1% of samples suggest invasive carcinoma.

Nuclear and cellular abnormalities indicating probable CIN3 with additional features suggesting possibility of invasive cancer.

ACTION

Urgent referral to a gynaecological oncologist.



RESULT GLANDULAR NEOPLASIA or ?GLANDULAR NEOPLASIA**EXPLANATION**

Dyskaryotic glandular cells.

May represent:

Endocervical adenocarcinoma in situ

or

Endocervical adenocarcinoma of the cervix

or

Adenocarcinoma of the endometrium

or

Extra-uterine adenocarcinomas.

ACTION

Urgent referral to a gynaecological oncologist.

Note

Adenocarcinoma in situ may co-exist with CIN3 and it may not always be possible to distinguish them cytologically.

COLPOSCOPY

Very high levels of patient anxiety are associated with concerns about the outcome of investigation (fears of cancer) and the colposcopy procedure. The colposcopy leaflet should be given to women prior to her colposcopy appointment, and preferably at the time of referral. This may reduce patient anxiety. Details of where to obtain relevant leaflets are given on the last page of this booklet.

Women should have explained to them:

Why colposcopy is required

- Women are referred to a colposcopy clinic if their samples have shown evidence of cells which may lead to cancer if left untreated.
- It is a common problem: about 1 in 12 women have abnormal samples.
- Usually the condition present is called CIN which is invisible on naked eye inspection and not doing any harm to the patient at present.

- It is very rare indeed for these abnormalities to be cancer.
- Some of these abnormalities will return to normal on their own, but most will be cured after some simple out-patient treatment.
- CIN, particularly if high grade, may develop into invasive cancer if left untreated.

The procedure of colposcopy

- The patient lies on a couch with her legs in leg rests.
- A colposcope is a magnifying instrument that sits between the woman's legs but does not enter the vagina. A speculum will be inserted.
- The procedure takes 10-15 minutes. No anaesthetic is required.
- The woman is informed of the diagnosis and appropriate treatment suggested.

Note The sampling may be slightly painful. The biopsy instrument may appear alarming to some patients.

The examination

- The cervix is examined.
- A cytological sample may be taken by the usual procedure.
- Acetic acid solution is applied to view any abnormal areas (may sting slightly).
- An iodine solution may be applied to show the outer limits of abnormal areas.
- A biopsy may be taken to provide histological information.
- Women should be advised that they may be offered treatment at the first colposcopy visit. More details are given in the section 'Treatment of CIN'.

WHEN SHOULD THE CERVIX BE TREATED?

CIN grade should be confirmed histologically by either a punch biopsy or an excision biopsy, usually using a diathermy loop. (LLETZ, large loop excision of transformation zone).

The natural history of lower grade abnormalities is not well understood.

The majority of low grade abnormalities may not progress, but some would

eventually lead to invasive disease if not treated at any stage.

A balance must be reached between potential over-diagnosis and over-treatment, and the need to ensure that progression to invasive disease does not occur.

No definite treatment policy can be defined with any degree of certainty.

CIN1 is generally at the low risk end of the spectrum and CIN3 at the high risk end.

CIN2 is intermediate.

CIN at high risk of progression must be treated.

Currently, CIN2 is treated in the same way as CIN3 (high grade).

CIN1 can either be treated or be kept under close observations (low grade).

Consideration should be given to the likelihood of maintaining contact with the patient during the surveillance period.

CIN2 and 3 should be treated once diagnosed.

CIN1 may be treated or kept under close surveillance.

TREATMENT OF CIN

A woman may be offered treatment at the first colposcopy visit and she should be made aware of this possibility.

The treatment is usually given under local anaesthetic.

Cervical function is only rarely compromised by treatment.

Uterine contraction (similar to menstrual cramps, but sometimes like labour pains) may be experienced.

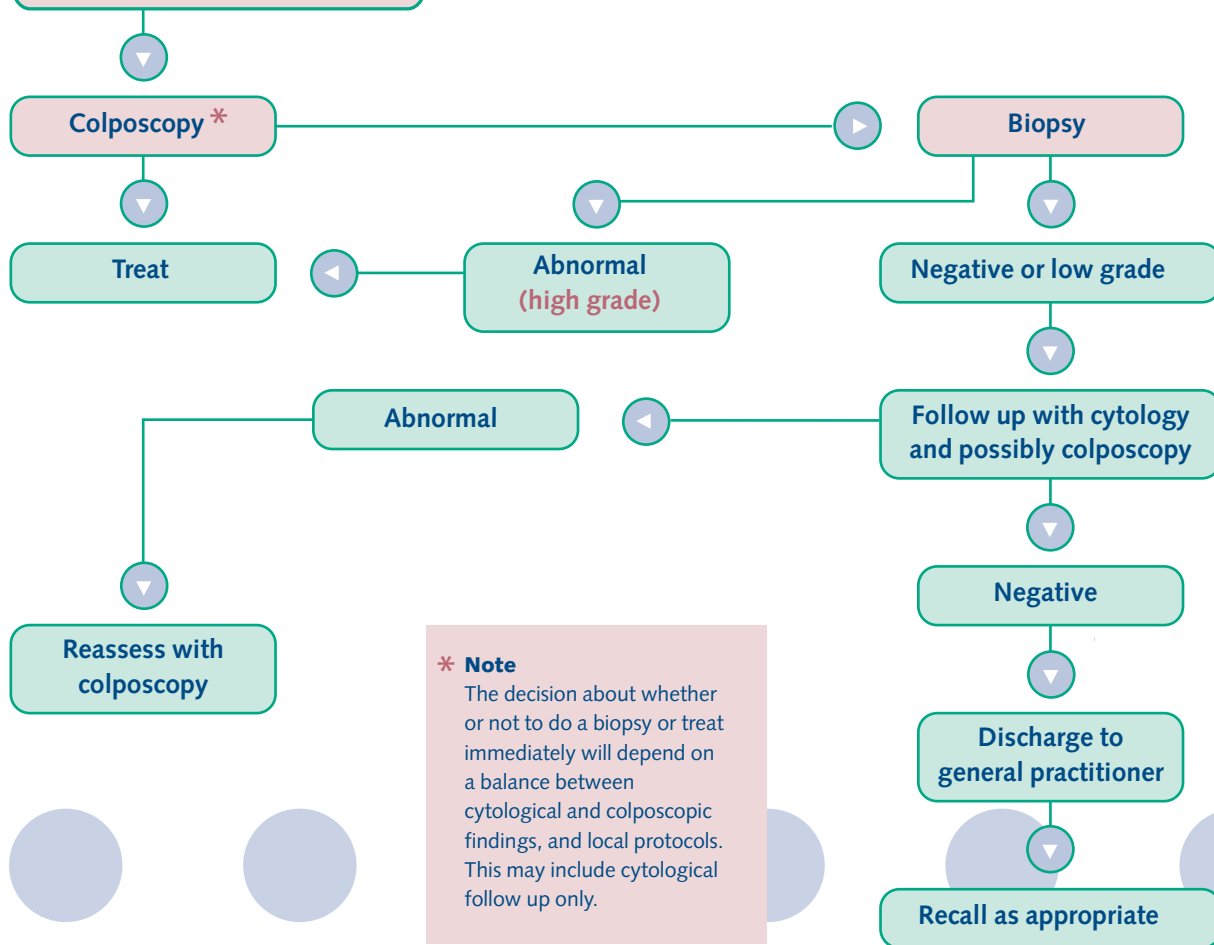
Vaginal bleeding may follow treatment, women should be advised to take some sanitary protection with them.

Rarely a general anaesthetic may be required.

Results of cervical screening

- Inadequate on **three** occasions
- Borderline on **three** occasions
- Mild dyskaryosis on **two** occasions
- Moderate dyskaryosis on **one** occasion
- Severe dyskaryosis on **one** occasion
- Three borderline or more severe results in 10 years

PROTOCOL FOR MANAGEMENT OF ABNORMAL RESULTS



FOLLOW UP OF PATIENTS TREATED FOR CIN

Reasons for follow up

- To identify residual disease
- To identify new disease
- To reassure both the patient and the clinician

How should follow up be conducted

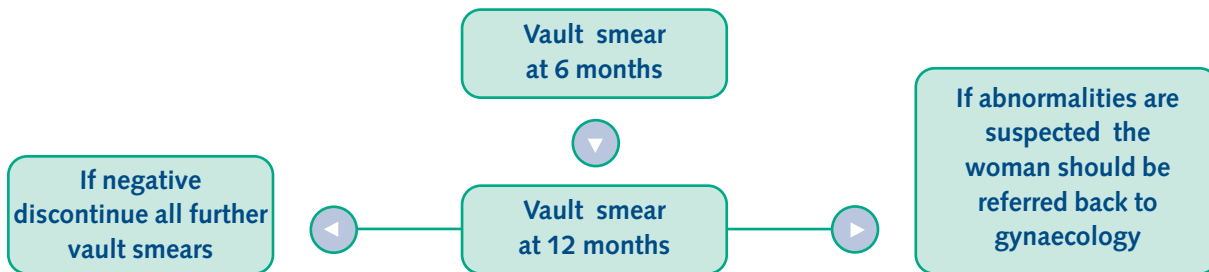
Cytology is essential for those who have undergone treatment. Sampling of the transformation zone may be difficult in women who have been treated for CIN. In this circumstance it may be necessary to use an endocervical brush **in addition** to a spatula.

Women should have at least 3 samples taken in 5 years.

Follow up may be in primary care or at a clinic according to local protocols. The first follow up should be done in clinic.

Colposcopy is not essential in the review process but may enhance detection of persistent disease at 6 months.

FOLLOW UP AFTER TOTAL HYSTERECTOMY FOR CIN2 OR CIN3 WITH APPARENT COMPLETE EXCISION



Total hysterectomy is an indication for ceasing recall from routine screening. Vault smears are not part of the NHS Cervical Screening Programme. Follow up should be in accordance with the recommendations of the woman's gynaecologist.

FOLLOW UP AFTER HYSTERECTOMY FOR REASONS OTHER THAN CIN

Sub-total hysterectomy

If no cervical pathology, then normal smears at routine recall unless otherwise indicated by the laboratory.

Total hysterectomy

Total hysterectomy is an indication for ceasing recall.



APPENDIX 1

Liquid based cytology (LBC): The current situation

A new way of sampling and preparing cervical cells is currently being piloted in the screening programme. This new method is called liquid based cytology (LBC). Using this technique, the cells collected from the cervix are placed in a preservative fluid that is then sent to the laboratory rather than spread onto a slide. At the laboratory the sample is mixed and treated to remove unwanted material, and then a thin layer of the cell suspension is placed on a slide for inspection. The remaining sample is then available for additional testing such as HPV or chlamydia (see HPV appendix).

This method should reduce the number of inadequate smears by producing clearer slides. The pilot is also monitoring all the

effects, costs and practical implications of introducing this technology into the cervical screening programme.

The pilot was introduced following a report from the National Institute for Clinical Excellence.

LBC will be rolled out as the primary screening technique in Scotland by 2004.

The National Institute for Clinical Excellence (NICE) will make a further announcement about the use of LBC in England and Wales in summer 2003.

APPENDIX 2

Human papilloma virus (HPV): The current situation

There is currently a pilot of liquid based cytology (LBC) and high risk HPV type testing being conducted in the screening programme. Women who have borderline or mild dyskaryosis are being tested for HPV (using the initial sample collected for LBC). If high risk HPV types is found, the women are referred to colposcopy; if HPV is not found the women are invited for a repeat smear and HPV test after 6 months.

Introduction of this pilot followed the publication of a review of the role of HPV testing within cervical screening. This concluded that the most plausible role of HPV testing in the NHS CSP may be to guide the management of women with borderline or mildly dyskaryotic smears.

Epidemiology of HPV and CIN/carcinoma of the cervix
Infection with certain types of human papillomavirus (HPV), in particular HPV 16 and HPV 18 have been shown to be associated with development of cervical cancer and also cervical intraepithelial neoplasia (CIN).

It has been shown that 99.7% of cervical cancers contain HPV DNA and there is debate about whether any HPV negative carcinomas exist.

All grades of CIN have also been shown to be associated with HPV infection with at least 76% of CIN being attributable to HPV.

Women who have an HPV infection have increased odds ratios for the development of high grade cervical abnormalities (and higher odds ratios if infected with HPV 16).

Other possibilities for HPV testing

HPV testing as a primary screening tool has a higher sensitivity for CIN2 or worse (ranging from 80% to 100%) than cytology (ranging from 40% to 88%), but a lower specificity (range for HPV testing 51% to 95%; range for smear tests 77% to 99%).

The specificity of HPV testing is likely to be especially low in young women (under 30 years old) who tend to have transient HPV infections.

HPV testing may also be used to indicate situations where screening may be undertaken less frequently or be stopped early for older women.

APPENDIX 3

Controversy surrounding the management of mild dyskaryosis

- HPV triage may be useful in determining which women require immediate colposcopy – see appendix 2
- Aetiology suggests that although the majority of mild dyskaryotic smears will revert to normal or persist as mildly dyskaryotic, a small proportion may progress to severe dyskaryosis.
- A recent study in Aberdeen concluded that although safe, surveillance was not an efficient management strategy.
- Others argue that surveillance allows confirmation of cellular changes before medical investigation is considered.
- It is important to find a balance between ensuring appropriate management and over investigation of many women who would never go on to develop invasive disease.
- Possible implications of immediate referral for colposcopy are:
 - increase in waiting times for colposcopy
 - impact on the psychological well-being of those women told they require referral to a specialist
 - demand for further funds for colposcopy clinics.
- Further research is needed to assess the role of cytological surveillance in mild dyskaryosis, to determine optimal management and the psychological implications for women.
- Consider referral for colposcopy after one occurrence of mild dyskaryosis.



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RESOURCES

There are three national leaflets about cervical screening and colposcopy. They are:

Cervical Screening – THE FACTS

What your abnormal result means and

The Colposcopy Examination

They are available free of charge for staff working within the NHS, the voluntary sector and for healthcare students. To order copies or obtain details of prices and availability of publications to those outside the NHS, please contact the NHS Responseline: 08701 555 455, Fax: 01623 724 524, Email orders: doh@prolog.uk.com

Electronic copies of these leaflets are available from:

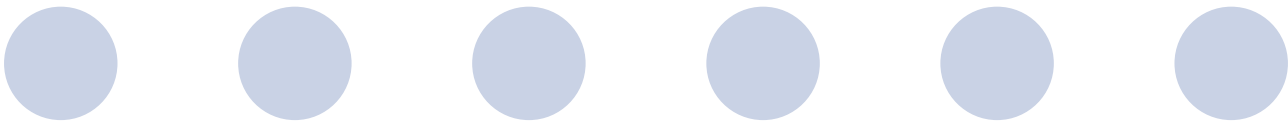
<http://www.cancerscreening.nhs.uk/cervical/publications/in-04.html>

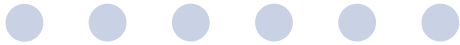
<http://www.cancerscreening.nhs.uk/cervical/publications/whatyourabnormalresultmeanspdf.pdf>

<http://www.cancerscreening.nhs.uk/cervical/publications/thecolposcopyexamination.pdf>

Further information about cervical cancer screening can be obtained from the NHS Cancer Screening Programmes Website <http://www.cancerscreening.nhs.uk/index.html>.

A booklet *Understanding cervical smears* and additional sources of support are available from CancerBACUP <http://www.cancerbacup.org.uk/>





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