

## Maxillofacial Unit

# Odontogenic Keratocysts and Carnoy's Solution

**This leaflet contains information about Carnoy's solution. Please read it carefully. If there is anything you do not understand, or if you have any questions please ask your doctor.**

Your doctor has given you this leaflet because Carnoy's solution is not licensed. The makers of medicines must obtain a 'product licence' from the Government if they want to promote their medicine as a licensed medicine in the United Kingdom. They must show the Government's Medicines Control Agency that their medicine works for the illnesses, or condition, to be treated, does not have too many side effects or risks, and has been made to a high standard.

### What is Carnoy's solution?

Carnoy's solution contains:

- Absolute alcohol (as ethanol)
- Glacial acetic acid
- Ferric chloride
- Chloroform

Carnoy's solution is made in a special hospital pharmacy manufacturing unit. It is made in small quantities and, because it is only used in a small number of patients, a licence has not been applied for.

The use of Carnoy's solution, in addition to removing the cyst, has been suggested as a way of reducing the chance of it coming back, and this is why your surgeon wants to use it. Its use in this way is supported by other maxillofacial surgeons in the world.

Carnoy's solution can harden and kill tissue with which it has contact.

We think, when it is used together with surgical removal it may help reduce the chance of the cyst coming back compared to just simply removing it, but at present we don't know by how much.

## How is it used?

There are two possible ways that Carnoy's solution can be applied. These are listed below. The way it is applied may depend on the location or size of the keratocyst.

1. After the cyst is removed the solution is applied sparingly to a piece of gauze that is placed in the bony space (or cavity) left behind. The gauze is left in the cavity for a short period of time and then removed. The aim of applying it in this way is to kill any cells, or tiny cysts, that may be left behind from the cyst lining after the cyst has been removed. It is thought these cells and tiny cysts may be responsible for some recurrences.
2. In cases of large cysts, for example in the lower jaw bone, the cyst content may be sucked out and the cyst then filled with Carnoy's solution. The Carnoy's solution 'fixes' (hardens) the lining of the cyst which enables it to be more readily removed.

Your surgeon will discuss the way it will be applied with you.

## Are there any side effects?

At the moment it is unclear what the side effects are. However, there is some information to show that Carnoy's solution can affect nerves. If a nerve in the jaw is close to the surface.

Chloroform (an ingredient in Carnoy's solution) is classified by the Medicine's and Healthcare products regulatory agency as potentially carcinogenic. This is due to some animal studies that showed a risk of carcinogenicity in doses of chloroform providing chronic (repeated exposure). The international agency for research on cancer has classified chloroform as inadequate evidence for carcinogenicity in humans. The one off nature of our use of Carnoy's containing chloroform in your procedure means that the risk of carcinogenicity is very low.

## What is Carnoy's solution being used for?

Odontogenic Keratocysts are cysts, originating in teeth, which may occur in any part of the upper and lower jaw. Cysts are like fluid filled balloons. Keratocysts tend to grow slowly inside the jaw bone, and they can grow quite large. Different surgical treatments have been used to treat the keratocysts, however, they have a tendency to come back after some of these treatments. Removing the cyst with its lining intact (enucleation) is one of the most common, and less extreme, ways of surgically removing a keratocysts. It has been reported that the keratocysts may return in, on average, around a third of patients when the cyst has simply been removed.

## Why do I need to sign a form?

You need to sign the form to say that you have received information about this product and understood that it is not licensed, and that, having read and understood the information you have been given, you consent to Carnoy's solution being used. Make sure you understand what is on the form and if you have any questions please ask your doctor.

Consent form for the use of Carnoy’s solution

Please read each question carefully and tick your response in the relevant box

I have read the information leaflet about Carnoy’s solution and understand that it is not a licensed product in the UK.

Yes ☐ No ☐

I have had the opportunity to read the information leaflet I have been given and ask questions about the procedure.

Yes ☐ No ☐

I am satisfied with the information I have been given by:

Yes ☐ No ☐

I consent to Carnoy’s solution being used.

Signature: .....

Name: .....

Date: .....

**If you have any comments about this leaflet or the service you have received you can contact :**

Maxillofacial Unit  
Huddersfield Royal Infirmary

Telephone: (01484) 355737

[www.cht.nhs.uk](http://www.cht.nhs.uk)

**If you would like this information in another format or language contact the above.**

Potřebujete-li tyto informace v jiném formátu nebo jazyce, obraťte se prosím na výše uvedené oddělení

Jeżeli są Państwo zainteresowani otrzymaniem tych informacji w innym formacie lub wersji językowej, prosimy skontaktować się z nami, korzystając z ww. danych kontaktowych

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ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਉਪਰੋਕਤ ਵਿਭਾਗ ਵਿੱਚ ਸਾਡੇ ਨਾਲ ਸੰਪਰਕ ਕਰੋ।

اگر آپ کو یہ معلومات کسی اور فارمیٹ یا زبان میں درکار ہوں، تو  
برائے مہربانی مندرجہ بالا شعبے میں ہم سے رابطہ کریں۔

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