



Embalming  
by  
Peter Dinn

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## **Front Cover Picture**

Proportions of the Body by Leonardo Da Vinci (1452 - 1519). This picture is from a page of his amazing notebooks in which he studied the human body and made detailed observations and descriptions. In this way Da Vinci contributed to the science and profession of embalming in a most significant way.

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<b>Contents List</b>	<b>Page</b>
Introduction	5
History of Embalming	
• Egyptian period	6
• Medieval period	8
• Modern period	9
Embalming in Australia Today	11
Australian Institute of Embalming	
• Code of Ethics	12
Who are Embalmers?	13
What is Embalming?	14
• What is Disinfection?	14
• What is Preservation?	15
• What is Presentation?	16
How is Embalming accomplished?	16
Questions and Answers	18
Conclusion	23
References	24

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# *Embalming*

By Peter Dinn

This booklet is designed to provide basic information about embalming. When making funeral arrangements many questions arise regarding care of the deceased. Often making funeral arrangements is a difficult and sensitive time. It is also a time when decisions need to be made based on sound information.

This booklet has been written for you. Embalming is explained by looking through history, defining embalming itself and outlining sensitively how it is accomplished. The most frequently asked questions are answered simply and honestly.

Whilst every effort has been made to sensitively approach this topic please be aware that embalming itself is an emotive topic for many. Grief is unique to individuals and the death of a person close to you can and can affect people in many different ways.

I have extensive experience within the funeral industry Toscan Dinn Funerals take much pride in owning and operating a funeral business with fellow Embalmer Janine Toscan. We are both members of the Australian Institute of Embalming (AIE).

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# *Introduction*

In Australia embalming is a profession that is growing. More and more Australians have come to expect that their deceased be embalmed prior to burial or cremation. The funeral arrangement of today must include discussions of embalming in a sensitive and honest manner. Many families are unaware as to what embalming is, how it is achieved and by whom. To fully appreciate the profession and practice of embalming let us first walk through the pages of history and examine the Australian scene of today before answering the questions most often asked by you, the family.

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# *History of Embalming*

The history of embalming can be described using three time periods.

Egyptian or Ancient period: 3200 BC - 600 AD

Medieval period: 600 AD - 1850 AD

Modern period 1850 A. D. - today

## **Egyptian or Ancient period: 3200 B.C. - 600 A.D.**

Embalming originated in Egypt around 3200 B.C. The first bodies to be preserved were done so unintentionally with the assistance of Mother Nature. When a death occurred the person's body was placed into a shallow grave wrapped only in cloth or straw matting. The ground, which was sandy, dry and porous, contained no moisture and this combined with the high outside temperature prevented the growth of any bacteria. It was not until desert winds blew that these shallow graves became uncovered and families realised that a form of natural preservation had taken place.

Egyptian civilisation grew and different social classes developed. Rich Egyptians no longer considered burials in sandy graves to be appropriate. Graves were therefore dug deeper and wooden boards and stone slabs were used to line the graves so that no sand touched the body. Valuables were also added to the graves and this later gave rise to 'grave robbers'.

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It was at this time, when families returned to the desecrated graves to find valuables missing, that Egyptians realised this new form of burial had no natural preservation qualities. The bodies had begun to decompose.

The Egyptians not wanting to revert to the old method of sand graves looked towards developing other means of preservation. Simultaneously, due to the flooding of the Nile, bodies were no longer able to be buried in shallow earth graves. Sanitation conditions became very poor and the need for preservation was crucial. Inspired by their existing knowledge of food preservation the Egyptians began to preserve their deceased using similar methods. These included salting, sundrying, washing, spicing and finally wrapping the body in a mixture of resin and fat before placing the body into boxes or coffins and later tombs.

Embalming was performed on all people, both rich and poor (coffins and tombs were decorated accordingly) by the Priests of the day. The main reason for embalming was religious. The belief was that if the body was well preserved then the soul would be able to revisit the mortal remains at the completion of the “circle of necessity”. This “circle of necessity” was believed to take 3000 years to complete. Ultimately, the underlying belief was that the body and soul would rise to be with the Gods for ever more.

Embalming in Egypt declined at the time of the Roman conquests although it was occasionally practised as late as the 6th Century.

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## **Medieval period: 600 A.D. - 1850 A.D.**

During the beginning of this period no embalming took place and it was not until the 1500's that universities, schools and medical colleges were re-established. The focus of embalming had changed considerably. No longer were the primary reasons religious or for funeral rites but rather were related to anatomical research.

The major developments in embalming which took place in Europe can be attributed to the study by anatomists. Anatomists in their quest to study the human body in detail needed to obtain bodies and preserve them for lengthy periods of time. Hence the embalming which took place in the 15th century was done primarily so that medical research could be conducted.

In the early Medieval period oils of turpentine, lavender and rosemary were used together with spirits of wine and saltpetre for preserving the body. Later in the same period embalming liquids changed to include chemicals such as zinc, arsenic, aluminium chloride, alcohol and zinc sulfate. Methods used included arterial injection and body soaking.

It was also during this period that the artist Leonardo Da Vinci (1452-1519) produced 'anatomical plates' following his detailed observation and study of the human body. It is thought that some form of embalming was therefore utilised by Da Vinci.

From the late 17th century to the mid 19th century many embalming discoveries were made by physicians. Important discoveries included William Harvey's understanding of the circulation of blood (1616 - 1628), Marcello Malpighi's knowledge of the existence of blood capillaries (1661) and Leeuwenhek's in 1683 with the important discovery of bacteria.

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It was also during this period, in 1838, that the first book written on embalming was produced titled *History of Embalming* by a Frenchman named Jean Nicolas Gannal (1791 - 1852).

### **Modern period 1850 A. D. - today**

During this period the focus of embalming changed. As opposed to Doctors and researchers needs for anatomical study, the main reason for embalming was now to preserve the body prior to the funeral. Funeral rites and embalming became intertwined. Ground breaking knowledge gained from the European anatomists late in the Medieval period contributed to the Americans' embalming methods prior to burial.

It was the outbreak of the American Civil War in 1861 which fully utilised the Embalmer's skill in preserving bodies. In previous American wars the skill, knowledge and facilities were not available to allow embalming of soldiers so that they could be returned home. In past wars soldiers were buried on the field near where they fell and family informed at a later time. It was during the Civil War that families began to search for their loved ones in nearby hospitals and requested that they be allowed home for burial. Embalmers now referred to as Embalming Surgeons and set up in teams, began to embalm soldiers so that they could be returned home to their families for burial. Towards the end of the 19th century Embalmers were considered skilled professionals in their own right.

In 1859 and 1868 the chemical Formaldehyde was discovered by two men Butlerov and Hofmann. Although Formaldehyde was not employed for embalming purposes at that time it is now considered to be one of the most suitable embalming chemicals and is widely used.

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Embalmers in this period used a variety of chemicals and specialised equipment to ensure preservation of the deceased. The funeral and embalming remained closely linked. Public awareness increased regarding embalming and the first school for Embalmers was officially opened in America in 1883.

Since 1883 through to today embalming techniques, equipment and chemicals have greatly improved. Now as we enter the new millennium we as Embalmers can provide excellent results in disinfection, preservation and presentation (See pages (14-16)).

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## *Embalming in Australia Today*

In Australia today it is difficult to say how many families utilise the services of Embalmers as no formal records or statistics are maintained. Embalmers must be qualified to practice and are usually employed through Funeral Directors. Currently only a small number of Funeral Directors have qualified Embalmers on staff and when they are needed their services are contracted in. It is important for people to realise that not all Funeral Directors are Embalmers and not all Embalmers are Funeral Directors.

Embalming in Australia is usually first discussed with a family during the funeral arrangements. The focus of a funeral is to say goodbye to a person and to dispose reverently of their mortal remains. Much care is taken in looking after the body. This should always include mortuary care by a qualified Embalmer.

Australians in general are becoming aware of the existence of embalming however more public awareness is needed. It is said that countries such as the United States of America and New Zealand embalm over 90% of those who die. High standards of embalming are now expected in these countries where familiarity with embalming is present.

Australians are becoming more aware regarding the benefits of embalming and therefore expectations are changing. Booklets such as this aid in the process of educating Australian families about embalming.

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# *Australian Institute of Embalming*

## *Code of Ethics*

The Australian Institute of Embalmers provides a Code of Ethics for Embalmers. It outlines their responsibilities as members of the Institute and highlights the respect and care which every deceased person deserves.

1. I believe the practice of embalming is in the best interest of the public health and agree to promote embalming to the best of my ability.
2. I will treat with respect all human remains.
3. I guarantee a complete confidential relationship to those I am called on to serve.
4. I will endeavour to promote scientific research in the problems affecting embalming.
5. I undertake to abide by the Constitution of the Australian Institute of Embalmers and to support to the best of my ability any meetings or gatherings arranged by them.

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## *Who are Embalmers?*

Embalmers are qualified skilled professionals who embalm people after they have died. In Australia to practice as an Embalmer qualifications are recognised from England, United States of America, New Zealand and of course Australia. Standards of formal training and education in all these countries are high.

The Australian Funeral Directors Association has developed a Certificate for the funeral industry. This includes a Mortuary Science Embalming Certificate 4 which involves both academic and practical study over a 2 year period. The Certificate is recognised overseas and the detail and professionalism is first class.

When you deal with a company that has a qualified Embalmer on staff you can be assured that your loved one is receiving the best quality care possible.

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## *What is Embalming?*

We now have an understanding how history has influenced the art and science of embalming. Following the three periods discussed earlier we will now examine how embalming is defined today.

*“Embalming is the process of chemically treating the dead human body to reduce the presence and growth of micro-organisms, to retard decomposition and to restore an acceptable physical appearance”.*  
(Frederick & Strub 1989)

Embalming is made up of three processes:

1. Disinfection;
2. Preservation; and
3. Presentation/appearance.

### **What is Disinfection?**

Disinfection is the eradication or reduction of micro-organisms to a level that is not considered harmful to those that come in contact with the person. Disinfection is the main purpose of embalming.

When a person draws their last breath and sometimes before that point the human body begins to break down. Bacteria can be passed from the sick or deceased person to a new host. This can occur at the home, hospital, mortuary or even during the viewing by the family.

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Once a body is properly embalmed by a qualified Embalmer the risk of further infection is greatly reduced. This is because the structure of the cells is changed by the use of formaldehyde based chemicals making them unsuitable for bacterial growth.

### **What is Preservation?**

The purpose of preservation is to temporarily prevent further deterioration of the person who has died. Preservation is the secondary purpose of embalming. Until embalming takes place temporary preservation is achieved through refrigeration. Following embalming refrigeration is no longer required.

There are many different reasons why preservation is required:

- delays with the funeral arrangements;
- interstate transportation;
- international repatriation;
- religious or culture beliefs;
- vigils/long viewing periods; or
- specific family requests.

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## **What is Presentation?**

Presentation refers to a person's final appearance. How a person is presented is often influenced by:-

- the cause of death - expected, sudden or accidental;
- severe injury and the possible need for reconstruction;
- time elapsed between death and mortuary care;
- discolouration due to climatic conditions; and
- specific family requests.

Australians in general expect a person's final appearance to be as natural as possible. Very little cosmetics are used as natural appearance and colour is important. The final presentation of a person can affect how a loved one is remembered and it has been proven to help with the grieving process.

Overall disinfection, preservation and presentation are closely linked.

## ***How is Embalming Accomplished?***

Embalming should always be carried out by a fully qualified Embalmer and is a process which generally takes 3-4 hours but can take several days depending on the length of time the preservation is required. All people are treated with respect and dignity despite the invasive nature of the work. (See Australian Institute of Embalmers' Code of Ethics page 12).

Prior to embalming commencing the Embalmer assesses the body of the person for weight, injury, existing discolouration, swelling and takes into account the cause of death.

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Of considerable importance is the time that has elapsed between death and the commencement of mortuary care. The embalming process is influenced by any one of these factors. Following this initial assessment decisions are made regarding appropriate chemical usage.

Specific steps are then taken to prepare the body including;

- washing, drying and spraying with a surface disinfectant;
- washing and drying the hair;
- cleaning fingernails;
- shaving facial hair if required/requested and
- positioning the body prior to embalming due to the stiffening affects which formaldehyde based chemical produces.

Once the basic preparation of the person has taken place embalming begins. Embalming, (the injection of a solution containing disinfectants, preservatives and water), requires pressure in order to travel through the entire circulatory system. This pressure is provided by a specially designed pump. The Embalmer raises various arteries and veins around the body at different points to allow for both the injection of embalming fluid and the drainage of blood. The drainage of blood is necessary so that the embalming fluid is able to travel through the body.

Fluid circulates throughout the body and is absorbed by cells changing their structure and making them highly resistant to bacterial growth. It is at this point that the tissue becomes disinfected and preserved.

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## *Questions and Answers*

Below is a list of the most often asked questions regarding embalming which are usually asked during the funeral arrangement.

- *Is the family always informed if embalming is to be carried out?* Yes.  
Permission from the family is always required due to the invasive nature of embalming.
  
- *Does embalming affect whether a person can be buried or cremated?* No.  
A person can be buried or cremated regardless of whether they are embalmed or not.
  
- *Does a person have to be embalmed?* No.  
A person does not have to be embalmed unless being transported interstate or overseas, placed in a concrete vault (under-ground) or a crypt (above-ground). This is due to Australian Funeral Directors Association guidelines and health regulations.
  
- *Do all religions permit embalming?* No.  
The Jewish and Islamic faiths consider that mortuary care separate to the basic preparation carried out by the community men/women is disrespectful to the body.

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- *Can every person be embalmed regardless of age?* Yes.

Every person can be embalmed regardless of age.

- *Is a photograph required?* No.

Australians in general expect a person's final appearance to be as natural as possible. Very little cosmetics are used as natural appearance and colour is important. The final presentation of a person can affect how a loved one is remembered and has been proven to help with the grieving process. If a family has special requests regarding make-up or hair style than a photograph can be helpful.

- *What about infectious diseases such as AIDS, Hepatitis A, B or C etc?*

Universal procedures are employed in the funeral industry. In Australia different states are governed by different health regulations. In the event of a death occurring from an infectious disease the regulations in each state will apply as to whether embalming can take place.

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- *Can the embalmed person be taken home for a private viewing?*

Yes.

One of the benefits of embalming is that when a family desires, a private home viewing can take place safely.

- *Can a person look worse once they are embalmed?*

No.

When a person is embalmed by a qualified Embalmer the person's appearance will always be improved. In Australia very little cosmetics are used as natural appearance is one of the main goals.

- *Where does embalming take place?*

Embalming takes place in a mortuary. A mortuary is a specially designed room where both care and preparation of the deceased takes place.

- *Once a person is embalmed do they need to be refrigerated?*

No.

- *Does the body ever break down?*

Yes.

Embalming is temporary preservation of the body. The length of time the body stays preserved will depend on the strength of the chemicals used and the environment including; Humidity, Temperature, and whether body is to be placed in an earth grave, concrete vault (below ground) or a crypt (above ground).

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- *Is the whole body always embalmed?* No.

Complete embalming is required only for overseas repatriation or if the burial is to take place in a non-earth grave such as a vault or crypt. This is an Australian Funeral Directors Association guideline and health regulation.

- *What embalming chemicals are used?*

Formaldehyde based chemicals are widely used. This chemical is a very good disinfectant and preservative.

- *What colour are embalming chemicals?*

The colour of embalming chemicals varies. Colour is added to the fluid in order to restore a natural colour to the skin and so that naturally clear chemicals can be easily identified.

- *How does the embalming fluid enter the body?*

Embalming is the injection into the body of a solution containing disinfectants, preservatives and water. The injection requires pressure in order to travel through the entire circulatory system. This pressure is provided by a specially designed pump.

- *Where do the chemicals come from?*

Most embalming chemicals are imported from the United States of America.

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▪ *Is special equipment used?*

Yes.

The equipment used is specially designed for embalming. Some medical supplies are used as appropriate for example, scissors, cotton wool and bandages.

▪ *Is anything removed from the person?*

Yes.

As the embalming fluid enters the body it is necessary to have a drainage point to allow the blood in the veins to drain so that there is room for the injected solution to enter.

▪ *Can incisions be seen?*

No.

The small incisions made cannot be seen.

▪ *Does the cost of embalming vary*

Yes.

Cost will vary depending on whether the embalming is partial or complete. Partial embalming improves the appearance and colour and preserves and disinfects specific areas. Complete embalming is required for overseas repatriation or if the burial is to take place in a non-earth grave such as a vault or crypt. This is an Australian Funeral Directors Association guideline and health regulation.

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## *Conclusion*

Embalming is a profession which is growing in Australia and forever developing. This booklet is designed to provide you with information giving you a basic outline of embalming within the funeral industry. Booklets such as this aid in the process of educating Australians about embalming. Funeral Directors and Embalmers would prefer that the general public knew more about the industry than less and Toscan Dinn Funerals welcome your questions and comments.

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**Simple • Honest • Dignified**

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The following references were used to compile the information provided in this booklet:

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