



Highly Commended

# Science Writing

## Year 9-10

### Kavya Sharma

### Cedar College



Government  
of South Australia

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## **First Nation Science: How is Indigenous Australian medicine being incorporated into Western medicine in Australia?**

### **Introduction**

Medicine is the use of a drug or other remedy to treat or prevent disease. It is a universal healing practice that has been in use for many years. In conventional Western medicine, the medication used often only addresses a specific symptom. This approach of targeted treatment sometimes does not account for a patient's emotional and spiritual wellbeing in their healing process. In recent years, the trends of traditional and holistic medicine have been praised in a mainstream context due to their inclusion of emotional health and spirituality in their treatment. The traditional medicine native to Australia is Indigenous Australian medicine, also known as bush medicine. This article explores what Indigenous Australian medicine is and how it is being incorporated in Western medicine to account for more preventative measures, developments in cancer treatment and helping close the gap in healthcare between First Nation Australians and non-indigenous Australians.

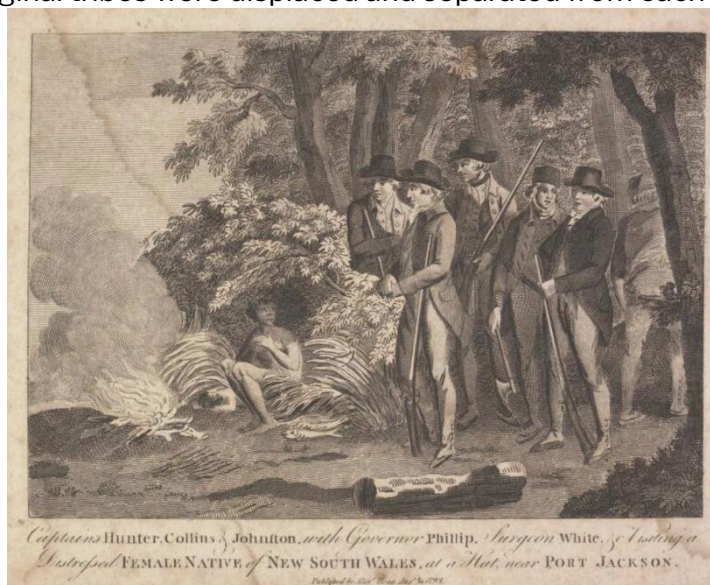
### **What is Indigenous Australian medicine?**

Indigenous medicine, also known as bush medicine, is the ancient and traditional Aboriginal use of native Australian botanicals for the use of physical and spiritual healing. It has been in practice for thousands of years (Bush Medijina, 2020). Bush medicine is mostly comprised of plant materials, but some animal products are also involved in this holistic treatment. Indigenous Australian people's identity stems from their connection to their land and bush medicine is completely naturally sourced. Thus, indigenous pharmacopoeia serves of great cultural importance because it interweaves Aboriginal people's identity and spirituality to their health and wellbeing.

Prior to European colonisation in Australia which first started in 1788, First Nation people took a holistic approach to their health. Indigenous Australians were a strong and healthy race. They had active lifestyles due to their hunter-gatherer techniques used to procure resources. Little evidence has been found to indicate widespread disease and illness among the Indigenous people before European settlement in Australia (Jackson L, Ward J, 1999). Hence, indigenous remedies were traditionally used to soothe and alleviate inflammatory or small bacterial ailments. However, bush medicine could not be used when settlement occurred and a number of new diseases including common colds, smallpox, syphilis and measles were introduced to Australia (The Aboriginal History of Yarra, 2022). Even though Europeans had good resistance to these common diseases, they proved to be fatal for Indigenous Australians. Thousands of First Nation people lost their lives as a result of the abrupt introduction of these new diseases.

It can be deduced that due to the lasting impacts of colonisation, the common practice of Indigenous Australian medicine is at risk of being lost. Due to the European influence on the lifestyles of First Nation people, many changes were made to their health and diet. Further discrepancies were created in the relationship between Indigenous people and their traditional remedies when Indigenous people were restricted from their flora and fauna. Native animals were often hunted by European men for sport and land started to

become generally closed off to First Nation people. Soon, an immense loss of culture occurred as Aboriginal tribes were displaced and separated from each other.



**Figure 1: The health discrepancies between First Nation people and non-indigenous Australians have been a prominent issue in Australia since colonisation**

## **Western medicine in Australia**

Western medicine is the system in which medical and healthcare professionals manage and treat disease using conventional evidence-based practices such as drugs, surgery, lifestyle changes or treatment protocols (Knight C, 2021). Western medicine is largely founded upon principles attributed to the ancient Greeks. Hippocrates, frequently acclaimed as the father of Western medicine, sought natural explanations for medical illnesses rather than sustaining supernatural beliefs about them, thus gradually promoting a more scientific approach to human anatomy and disease. Further research into medicine occurred in the Middle East and Western Asia as Europe entered the Middle Ages. This research travelled to Europe in the Renaissance era.

Western medicine entered Australia when colonisation and settlement occurred. For the first five decades of settlement in Australia, medical care was provided to everyone by the Colonial Medical Service. The private and individual practice of Western medicine became more common in Australia after 1850, as the wealth and population of Australia grew which resulted in a need for more medical aid (Lewis M, 2014).

In Australia, Western medicine is used for a vast variety of treatments that are not only for injury or disease, but also for aesthetic purposes. Modern Western medicine has also grown to incorporate the use of bush medicine to further improve the results of the medical treatment offered.

## **Inclusion of First Nation medicine in Western medicine treatment**

There are many features that distinguish Western medicine from bush medicine. Prior to European colonisation, Indigenous Australian medicine had more discernible differences. But after the introduction of European influences to the lifestyles of First Nation people, these differences were more obscured. Namely, these distinguishable features include the use of native flora and fauna in indigenous pharmacology rather than the use of chemical-based, mostly synthetic drugs in Western medicine. Indigenous medicine also encompasses physical, mental and spiritual wellbeing in treatment rather than using the approach of targeted treatment. Additionally, due to the storytelling and 'word of mouth' culture that most First Nation tribes have had, there is a lack of official publications or listing of Aboriginal bush medicines and plant remedies (Australian Indigenous Health/InfoNet, N/D). Contrastingly, Western medicine is a highly-science based field and is most conventionally used in the modern world, hence it is well-published.

Over recent years, having a more holistic approach to health has been shown to have many benefits. It is believed that prevention is better than cure, and traditional medicine such as First Nation medicine is suitable for preventing health issues in a modern-day context. Holistic medicines often have little to no side effects due to their natural derivation, whereas prescription drugs can have many side effects. This is because people may have an individual reaction to one of the various foreign ingredients in their medication, or the drug may be killing one type of unwanted cell but also destroying healthy cells (Brazier Y, 2017). In addition to this, indigenous remedies can help cope with several health concerns at a time in a non-invasive manner. For example, red ash tree, a plant endemic to Australia. As well as having anti-bacterial and anti-inflammatory compounds, red ash tree leaves are also laxative and diuretic which helps reduce cellulite (Nature & Garden, N/D). However, it is important to note that nature does not always necessarily mean a safer practice. Some plants can easily be misread, or ailments can be wrongly self-diagnosed. Hence, it is crucial to use holistic treatments complementary to conventional medicine with proper communication with medical professionals because the modern human body is not equipped to safely digest *all* natural medicines.



Figure 2: The Red Ash Tree (*Alphitonia Excelsa*) is native to NSW, QLD and NT

*Eremophila* plants, also known as emu bush plants, have been used by First Nation people for many years in ceremonial rites, liniments and antiseptics. Recent research into Australian bush medicine has shown to support evidence that a plant belonging to the *Eremophila* genus, counteracts resistance to a specific type of chemotherapy (University of Copenhagen, Faculty of Health and Medical Sciences, 2021). An issue with chemotherapy in cancer treatment is that sometimes cancer cells develop an ability to fight the treatment. The desert plant is found to inhibit this ability.

From the *Eremophila* genus plant, scientists have isolated flavonoids. These flavonoids are being tested on human cancer cells with SN-38, an active substance that is involved in the treatment and chemotherapy for lung cancer and colon cancer. The flavonoids from the specific Australian plant are prime for the research because they have anti-bacterial, antiviral and anti-inflammatory properties. By preventing the cancer cells' resistance to chemotherapy through the use of *Eremophila* plants, cancer treatment could become much more effective.



Figure 3: A plant from the *Eremophila* genus, which was frequently used in Ancient Aboriginal medicine

Indigenous Australian medicine is also being incorporated in Western medicine through the integration of Aboriginal healing into the health system. This practice is also helping close the gap in healthcare within Australia. In 2019, the North Adelaide Local Health Network (NALHN) entered into a partnership with the Anangu Ngangkari Tjutaku Aboriginal Corporation (ANTAC) to deliver traditional Aboriginal treatments to patients in primary and acute care settings (ANZSOG, 2021). The Ngangkari are traditional healers from Aboriginal tribes in central Australia. They have knowledge and skills of bush medicine passed down from elders and they hold physical health at the same level of importance as spirituality and mental health. The Ngangkari healers, who specialise in mental disturbances, have connection to kin, land and country which makes them appealing and trustworthy to many First Nation people.

The alliance between NALHN and ANTAC helps reduce healthcare discrepancies among Indigenous and non-Indigenous Australians by forming a two-way healthcare model. The use of Indigenous Australian medicine in conjunction with Western medicine assesses patients more comprehensively and reduces misdiagnosis. Since the traditional healers seem more calming, patients also comply with Western medical treatments (ANZSOG, 2021).

As shown in Figure 4, child mortality rates of Indigenous children are twice as high as those of non-Indigenous children while life expectancy of Indigenous people is almost ten years less than non-Indigenous adults. Closing this gap between Indigenous and non-Indigenous people poses as a crucial issue. The healthcare inequalities have subsequent consequences such as some First Nation people missing out on education, employment and other lifestyle aspirations as a result of their suffering health. Through the integration of bush medicine and Western medicine, the trust of First Nation people could be regained and more of their deaths due to disease or some mental illnesses can be prevented.



## Figure 4: National Close The Gap Day infographic

### Conclusion

Indigenous Australian medicine incorporates many facets of health – not simply physical health. Bush medicine's ancient history is coming into emergence to help combat modern health-related issues. This traditional medicine also improves general health of people through the natural products' several health benefits. The use of native botanicals may help solve issues in Western medicine that synthetic-based drugs cannot. This reflects the strength in ancient science. The incorporation of Indigenous Australian medicine in conventional medicine may also help closing the gap by appealing more to First Nation people who have consistently struggled to fully adapt to Western medicine. However, a full reliance on bush medicine may not be suitable as it may interfere with the conventional medicine that most people have become accustomed to.

**Word Count:** 1625

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