



# Blood, Faith, and Medicine: The Christian World and the History of Transfusion in Europe and North America

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## Abstract

Blood has long held a central place in both religious symbolism and medical practice, carrying meanings that range from life, purity, and covenant to danger, impurity, and death. This article examines the historical relationship between blood, medicine, and Christian thought, focusing especially on how Christian traditions interpreted the emergence of blood transfusion. The study adopts a historical narrative approach, analyzing primary and secondary sources from Europe and North America. After outlining the theological meanings of blood—covenant, sacrifice, redemption, purity, and danger—the article traces key milestones in the scientific development of transfusion from early modern legends to twentieth-century advances. Particular attention is given to the ways in which various Christian denominations responded to transfusion as it entered clinical practice. While Catholic, Orthodox, Anglican, Lutheran, Reformed, and Methodist communities gradually embraced transfusion as a legitimate therapeutic act aligned with principles of charity and the preservation of life, other groups, most notably Jehovah’s Witnesses, adopted a restrictive interpretation of biblical texts that led to the rejection of transfusion and generated significant ethical and legal debates. By integrating medical history with theological perspectives, this article demonstrates that the reception of transfusion within Christian cultures was shaped not only by scientific progress but also by enduring religious understandings of blood as a symbol of life, redemption, and moral responsibility.

**Keywords** Blood transfusion · Christian theology · Medical history · Religious ethics · Symbolism of blood · Jehovah’s witnesses

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## Introduction

Blood has long been regarded as one of the most powerful and evocative symbols in human culture. It embodies a profound ambivalence: on the one hand, it represents vitality, strength, purity, fertility, and the power to generate life; on the other, it evokes wounds, suffering, impurity, and death. This duality has made blood a central theme in both medicine and religion, shaping practices, beliefs, and cultural imagination across centuries (Raimondi, 2024).

In ancient traditions, blood was often understood as the very essence of life and a potential source of healing. In Greek mythology, Asclepius, the god of medicine, was said to cure the sick and even bring the dead back to life by using the blood that flowed from the decapitated head of Medusa (Apollodorus, 2019).

It is therefore unsurprising that blood plays a decisive role in the major world religions, where it serves not only as a sign of covenant with the divine but also as a medium of purification, sacrifice, and redemption. At the same time, medicine gradually redefined blood, no longer viewed primarily through its sacred symbolism but increasingly approached as a biological reality and therapeutic resource. These developments did not only raise technical and clinical questions but also provoked significant theological reflections (Raimondi, 2024).

This article aims to investigate the historical relationship between blood and religion, with a specific focus on the Christian tradition. In detail, although the history of blood transfusion is well known and extensively documented, the present discussion will concentrate on how blood transfusion has been interpreted within Christian thought and culture.

## Literature Review

Historical studies on blood transfusion have long focused on key scientific milestones and controversies surrounding early experiments (Farr, 1980; Fastag et al., 2013; Giangrande, 2000; Hall & Hall, 1980; Hoff & Guillemin, 1963; Learoyd, 2012a, 2012b; Maluf, 1954; Marinozzi & Conforti, 2005; Sturgis, 1942; Walton, 1974). More recent scholarship has expanded the analysis to include cultural and religious dimensions, examining how symbolic meanings influenced the medical use of blood (Cosmacini, 2007; Ferngren, 2016; Garraud & Lefrère, 2014). Research at the intersection of medicine and Christian thought has emphasized the central theological role of blood in covenantal and sacrificial traditions (Numbers & Amundsen, 1986), as well as denominational responses to therapeutic transfusion in the twentieth century (Childress, 1989; Harakas, 1990). However, a comprehensive examination of how Christian theological frameworks shaped the acceptance or rejection of transfusion across denominations remains limited. This study contributes to this literature by synthesizing historical, theological, and ethical perspectives with a focus on European and North American Christian contexts.

## Methods

This study employed a historical narrative methodology to analyze the cultural and theological responses of Christian traditions to the development of blood transfusion. Primary sources included early medical reports, ecclesiastical documents, denominational statements, and papal speeches from the seventeenth to the twentieth century. Secondary sources comprised peer-reviewed historical monographs, journal articles, and contemporary analyses of the symbolism of blood in religion and medicine. Sources were selected based on relevance, scholarly reliability, and representativeness within the European and North American Christian context.

## Blood and Religion: Covenant, Sacrifice, and Fear

In the Abrahamic religions—Judaism, Christianity, and Islam—blood has always been understood as life itself, a vital principle that ultimately belongs to God. The Bible is explicit on this point: “*Whoever sheds the blood of man, by man shall his blood be shed; for God made man in His own image*” (Genesis 9:6) (Raimondi, 2024). In the Old Testament, blood frequently seals the covenant between God and humanity. In Exodus 24, for example, Moses sprinkles the blood of sacrificial animals both on the altar and on the people, a gesture that unites the divine and the human and signifies a shared life. In the New Testament, this sacrificial role is assumed by the blood of Christ, which inaugurates the new covenant and replaces animal sacrifice with the offering of the Son of God, both human and divine, as a source of redemption, rebirth, and eternal life.

The centrality of blood in Christianity reaches its highest expression in the Eucharist. During the Last Supper, Jesus identifies the cup of wine with his own blood: “Take and eat; this is my body [...] Drink from it, all of you, for this is my blood of the Covenant” (Matthew 26:26–29) (Raimondi, 2024). In the Catholic tradition, the Council of Trent (1551) formally defined the doctrine of *transubstantiatio* (transubstantiation), according to which the bread and wine truly become the body and blood of Christ. This dogma, rejected by the Reformed churches, placed the symbolism of blood at the very heart of Christian liturgy. The blood of Christ, shed on the cross, thus replaced the blood of ritual sacrifices and came to signify victory over sin and death.

Alongside its salvific value, blood also carried ritual and social meanings. Circumcision, though practiced in many cultures, became in Judaism the *Berit Milah*, the sign of belonging to the people of Israel and of fidelity to God’s promise. Dietary prohibitions against consuming blood, still observed in Judaism and Islam, reflect the conviction expressed in Leviticus (17:11–12) and Deuteronomy (12:23–24) that “the life of the flesh is in the blood.” Christianity gradually abandoned such prohibitions, yet the sense of blood as a sacred substance not to be profaned remained deeply rooted (Raimondi, 2024). At the same time,

biblical regulations concerning menstruation and childbirth treated female blood as a source of impurity requiring ritual isolation (Leviticus 15:19–22; 12:1–8). Though originally based on the distinction between life-giving blood and blood associated with loss, these notions contributed for centuries to cultural attitudes that linked women to impurity and even to magical or agricultural superstitions.

The symbolism of blood could also be misused in destructive ways. The notorious Medieval “blood libel” accused Jews of killing Christian children to use their blood in ritual practices, a calumny that persisted into the modern era. Such episodes illustrate how blood, as a symbol of life and redemption within Christianity, could at the same time generate fear, prejudice, and violence (Raimondi, 2024).

These examples show how deeply the symbolism of blood shaped Christian theology, ritual, and culture. Blood could signify covenant, sacrifice, and salvation, but also impurity and danger. This symbolic framework inevitably influenced the way new medical practices, such as transfusion, were perceived and evaluated in Christian societies.

## History of Blood Transfusions: From Early Legends to Modern Medicine

The history of blood transfusion is often said to begin in 1492 with a dramatic but apocryphal episode: the attempted transfusion administered to Pope Innocent VIII (Giovanni Battista Cybo, 1432–1492) (Fig. 1). According to the chronicler Stefano Infessura (c.1435–1500), an unknown Jewish physician – erroneously identified by some authors as Abraham de Balmes ben Meir (c. 1440–1523) – proposed to save the ailing pontiff by introducing into his body the blood of three young boys (Infessura, 1890). The attempt proved fatal to both the pope and the children, and although modern historians generally regard this account as more legend than fact, the story left a strong mark on collective memory, fueling both suspicions toward Jewish physicians and reflections on the mysterious power of blood (Cosmacini, 2018; Gualino, 1934).

The procedure described by Infessura was not a transfusion in the modern sense but rather the oral ingestion of blood. Without knowledge of the circulatory system, a true transfusion was technically impossible (Raimondi, 2024). Indeed, Renaissance thinkers such as Marsilio Ficino (1433–1499) still recommended the consumption of young blood to invigorate the elderly. The notion of blood as a remedy was ancient: Egyptians had drunk the blood of animals for healing, Romans attributed curative power to the blood of gladiators, and similar practices are reported among Vikings. Ancient medical authors also suggested its use in conditions such as epilepsy, rabies, or leprosy (Raimondi, 2024).

A decisive turning point came with the discovery of the circulation of the blood, described by William Harvey (1578–1657) in *Exercitatio Anatomica De Motu Cordis et Sanguinis in Animalibus* (Harvey, 1628/1976). Several precursors had already advanced important observations: Andreas Vesalius (1514–1564), Realdo Colombo (c.1515–1559), Girolamo Fabrici d’Acquapendente (1533–1619), Andrea Cesalpino (1524–1603), and the Spanish physician-theologian Miguel Servet



**Fig. 1** Pope Innocent VIII (Giovanni Battista Cybo, 1432–1492). Public domain. via Wikimedia Commons [https://commons.wikimedia.org/wiki/File:Innocent\\_VIII\\_1492.JPG](https://commons.wikimedia.org/wiki/File:Innocent_VIII_1492.JPG)

(1511–1553) (Cesalpino, 1593; Colombo, 1559; Fabricius, 1603; Servetus, 1553; Vesalius, 1543). Based on these discoveries, the first experimental transfusions were attempted only in the seventeenth century. The English natural philosopher Robert Boyle (1627–1691) conducted early intravenous experiments, while his compatriot Richard Lower (1631–1691) performed successful transfusions from dog to dog before attempting, in 1667, to successfully transfuse blood from a lamb into the veins of Arthur Coga, a 32-year-old divinity graduate of Cambridge University, reportedly suffering from mental illness (Boyle, 1661; Fastag et al., 2013; Lower, 1669). The choice of the lamb was not incidental: beyond its availability as a docile animal, it carried unmistakable Christological symbolism, suggesting that the mild nature of the animal's blood might calm human agitation of Coga. Around the

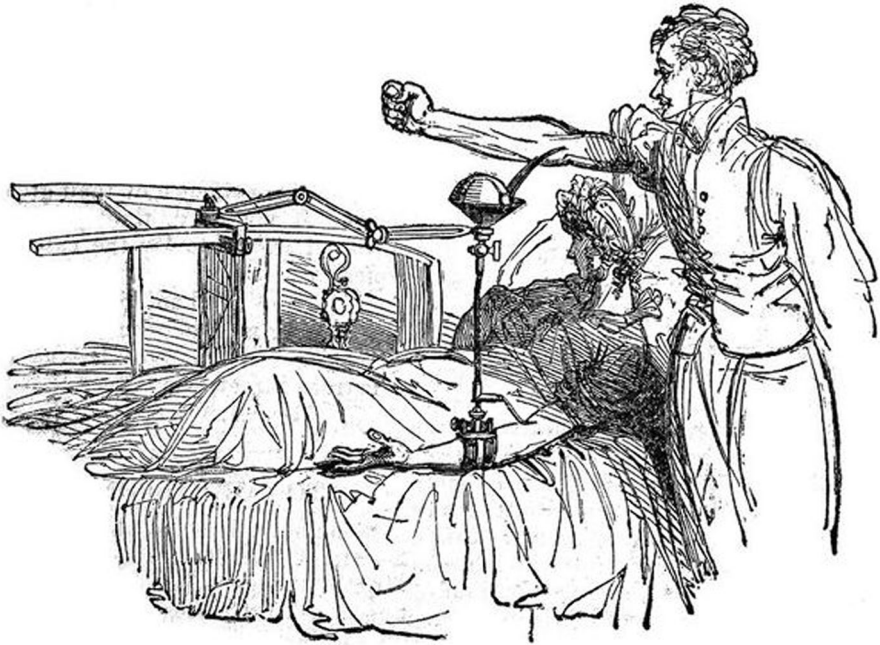
same time, in Rome Giovanni Guglielmo Riva (1627–1677) carried out at least three transfusions from lambs to humans in 1667, indicating that the Catholic Church did not initially oppose such experiments (Marinozzi et al., 2018; Riva et al., 2014).

The enthusiasm for these early experiments was short-lived. In 1668, a patient of Jean-Baptiste Denis (1643–1704) died after receiving a transfusion, and the ensuing trial led to a ruling that all such procedures in France required the approval of the Faculty of Medicine of Paris. Given the skepticism of most professors, this was effectively a prohibition. In 1670, France formally banned transfusions, and similar measures soon followed in England (1679) (Raimondi, 2024).

Some historians claim that Pope Innocent XI (Benedetto Odescalchi, 1611–1689) also condemned the practice through a “special proclamation.” However, no official documents or contemporary sources mention transfusions or any related prohibitions issued by the Roman Church. Moreover, even the historians who advance this claim do not agree on the date of the alleged papal decision. The dates proposed in the historical accounts fall between 1667 and 1689, a period covering the pontificates of three popes: Clement IX (Giulio Rospigliosi, 1600–1669), Clement X (Emilio Bonaventura Altieri, 1590–1676), and Innocent XI. There is likewise no evidence of any subsequent revocation of such a prohibition, which would have been necessary for the experiments carried out in the following centuries. Actually, interest in transfusions waned because of their associated risks and the numerous adverse events (Jones, 2021).

Therefore, transfusion remained absent from medical practice for well over a hundred years. Only at the end of the eighteenth century did physicians begin to revisit the idea, encouraged in part by the tragic death of George Washington (1732–1799) in 1799 after repeated bloodlettings for a throat infection, which highlighted the potential of alternative therapies. In the early nineteenth century, John Henry Leacock (1781–1828), a physician from Barbados, proposed that transfusions should be directed not at mental illness, as had been attempted in the seventeenth century, but at cases of acute blood loss (Starr, 1998). His ideas were put into practice by the English obstetrician James Blundell (1790–1878), who on 27 September 1818 performed the first documented human-to-human transfusion in London (Blundell, 1818). Blundell initially transfused small quantities of blood—between 100 and 150 ml—into patients suffering from severe hemorrhage. Although the first four attempts failed, largely due to the desperate condition of the recipients, in 1829 he successfully transfused a woman dying of postpartum hemorrhage, saving her life (Blundell, 1829). Blundell went on to develop rudimentary transfusion instruments (Fig. 2) and to keep careful records of his cases (Blundell, 1819, 1829), thereby laying the foundations of a systematic clinical practice. Yet opposition remained strong. Many contemporaries considered transfusion a dangerous, even profane act that mingled human blood in ways that could imperil not only health but also the soul (Raimondi, 2024).

Nevertheless, progress continued. Some of the greatest scientists of the time, such as Louis Pasteur (1822–1895), Claude Bernard (1813–1878), and Emil Adolf von Behring (1854–1917), began conducting research on blood, which was now regarded as a simple scientific substrate (Garraud & Lefrère, 2014). In 1875, the German physiologist Leonard Landois (1837–1902) published a systematic



**Fig. 2** Illustration of Blundell's method of blood transfusion (June 1829). Public domain. Source Wellcome Collection. <https://wellcomecollection.org/works/b9j3g3za>

review of transfusion outcomes that demonstrated both its risks and its potential, drawing attention to the need for greater precision in matching donor and recipient.

The decisive step toward the safety of transfusion came in 1901, when the Austrian physician Karl Landsteiner (1868–1943) identified the ABO blood group system, thereby explaining many of the fatal reactions in earlier attempts (Landsteiner, 1901). Working together with Alexander Wiener (1907–1976), Landsteiner later discovered the Rhesus (Rh) factor in 1940 (Landsteiner & Wiener, 1940). These discoveries made it possible to match donors and recipients with far greater precision and transformed transfusion into a routine medical practice.

The two World Wars provided both urgent need and unprecedented impetus for further advances, profoundly reshaping transfusion medicine and its organization (Starr, 1998). In 1914, the Belgian physician Albert Hustin (1882–1967) introduced sodium citrate as an anticoagulant, building on the earlier studies of the Italian pharmacologist Luigi Sabbatani (1863–1937). A year later, Richard Lewisohn (1875–1961), a German-born surgeon working in New York, determined the optimal concentration of citrate that prevented clotting without harming the patient (Lewisohn, 1952). During the First World War, American military doctors experimented with these solutions at the front, and in 1917 Oswald Hope Robertson (1886–1966) established the first mobile blood bank in France, using preserved, anticoagulated blood to treat wounded soldiers (Robertson, 1918; Stansbury & Hess, 2009).

Progress accelerated during the Second World War. In Britain, Janet Vaughan (1899–1993) organized large-scale civilian blood donation and developed practical methods for storing and transporting blood, including the adaptation of milk bottles as containers. In China, the Canadian surgeon Norman Bethune (1890–1939), who had earlier set up a transfusion service during the Spanish Civil War, inspired efforts to create efficient systems of collection and distribution. Meanwhile, John F. Loutit (1910–1992) and Patrick L. Mollison (1914–2011) refined the citrate-dextrose (ACD) solution, which extended the shelf life of stored blood to three weeks, a crucial advance for wartime medicine (Mollison, 2000; Ross & Del Maestro, 2024; Starr, 1998).

A further milestone was achieved in 1940, when Edwin J. Cohn (1892–1953), at Harvard University, developed the cold ethanol plasma fractionation method, enabling the separation of major plasma proteins such as albumin and gamma globulins (Creager, 1999). This innovation marked the beginning of modern plasma protein fractionation and its subsequent clinical application. These components proved life-saving for soldiers suffering from shock and burns following the Japanese attack on Pearl Harbor in 1941, when human serum albumin first entered large-scale clinical use (Creager, 1999). By the end of the Second World War, transfusion medicine had thus become an indispensable part of modern healthcare, firmly anchored in both scientific knowledge and institutional organization.

Equally important was the rise of donor registries and blood banks (Starr, 1998). In 1921, Percy Lane Oliver (1878–1944) founded the first organized panel of voluntary blood donors in London. The first hospital-based blood bank was established in Leningrad in 1932, followed by Barcelona in 1936 and Chicago in 1937. These initiatives quickly spread worldwide, ensuring that blood—once regarded as the most sacred of substances—could now be systematically collected, stored, and transfused, ultimately saving countless lives (Raimondi, 2024). The key milestones in the historical development of blood transfusion are outlined in Table 1.

## Christian Churches and Blood Transfusion during the Twentieth Century

When transfusion entered clinical practice in the nineteenth and twentieth centuries, Christian churches were faced with the question of how to interpret a procedure that directly touched the symbolism of blood. As aforementioned, for centuries, blood had been regarded in theological terms as a sacred element, the sign of covenant, sacrifice, and redemption. The idea of transferring it from one person to another could therefore appear unsettling. Yet in most Christian traditions, the symbolic dimension was gradually distinguished from the medical reality, and transfusion came to be accepted as a therapeutic act aimed at preserving life (Ferngren, 2016; Numbers & Amundsen, 1986).

In the Catholic Church, this acceptance became particularly clear in the mid-twentieth century. On October 9, 1948, Pope Pius XII (Eugenio Pacelli, 1876–1958) addressed the *Italian Blood Donors Association*, presenting blood donation and transfusion as exemplary acts of Christian charity and solidarity. In that address, he

**Table 1** Historical milestones in blood transfusion

Year	Figure(s)	Event/contribution
1492	Innocent VIII	Alleged attempt to treat Pope Innocent VIII using the blood of young boys
1628	William Harvey	Publication of <i>De Motu Cordis et Sanguinis</i>
1661	Robert Boyle	Early intravenous experiments
1667	Richard Lower	Successful dog-to-dog transfusions
1667	Richard Lower	Lamb-to-human transfusion (Arthur Coga)
1667	Giovanni Guglielmo Riva	Lamb-to-human transfusions in Rome
1668	Jean-Baptiste Denis	Death following transfusion
1818	James Blundell	First documented human-to-human transfusion
1875	Leonard Landois	Analysis of transfusion incompatibility
1901	Karl Landsteiner	Discovery of ABO blood groups
1914	Albert Hustin	Introduction of sodium citrate
1915	Richard Lewisohn	Optimal citrate concentration identified
1917	Oswald Hope Robertson	First mobile blood bank (France)
1921	Percy Lane Oliver	First voluntary donor registry (London)
1940	Landsteiner; Wiener	Discovery of Rh factor
1940	Edwin J. Cohn	Plasma fractionation method developed
1940s	Vaughan; Mollison; Loutit	ACD solution and improved storage methods

praised voluntary blood donation as a noble act of altruism and affirmed that the gift of one's own blood to save another person's life represents a concrete expression of the Gospel commandment of love of neighbor. He further emphasized that blood donation, when performed freely and for therapeutic purposes, constitutes an authentic act of charity, thereby framing transfusion within a moral horizon of self-giving oriented toward the protection of human life rather than sacrifice or violence (Pope Pius XII, 1948).

A decade later, Pius XII returned to hematological themes in two well-documented interventions delivered on September 5 and 12, 1958, respectively, at the VII Congress of the International Society for Blood Transfusion and at the VII International Congress of Hematology, held in Rome. On these occasions, the Pope primarily addressed issues related to blood genetics, heredity, and emerging eugenic concerns, while also expressing clear appreciation for scientific progress in transfusion medicine. He emphasized that the Church had always regarded scientific research as a gift of God when oriented toward the protection of human life and dignity (Pope Pius XII, 1958a, 1958b).

Although these discourses do not contain a formal magisterial definition of the moral liceity of blood transfusion, they nonetheless reflect a consistent and publicly articulated attitude of approval toward blood donation and transfusion as therapeutic practices. Rather than issuing doctrinal rulings, Pius XII positioned the Catholic Church as a constructive interlocutor of the medical and scientific community, implicitly legitimizing transfusion medicine within a framework of charity, responsibility, and respect for the biological reality of blood. In this sense, the papal

interventions of 1948 and 1958 can be understood as key moments in the historical alignment between Catholic moral discourse and modern transfusion medicine.

Later, the *Catechism of the Catholic Church* described organ and tissue donation as a “noble and meritorious act”—an expression of Christian charity that easily extends to the gift of blood (Catechism of the Catholic Church, 1997). Pope Francis (Jorge Mario Bergoglio, 1936–2025) went further by publicly thanking voluntary blood donors in Italy on the occasion of World Blood Donor Day in 2015 (Pope Francis, 2015). This teaching has also been embodied in the personal experiences of recent pontiffs. Pope John Paul II (Karol Wojtyła, 1920–2005), gravely wounded in the assassination attempt of 13 May 1981, survived thanks to multiple transfusions. More recently, Pope Francis also received blood transfusions during his final illness.

The Orthodox Churches followed a similar path. During the Second World War, Orthodox hospitals in Greece and Russia began to perform transfusions routinely for wounded soldiers, and no ecclesiastical authority attempted to forbid the practice (Harakas, 1990). In pastoral writings of the second half of the century, Orthodox theologians framed transfusion as compatible with the sacramental vision of medicine: Physicians, acting with blood and skill, were regarded as collaborators in God’s healing work (Harakas, 1990).

In the Anglican Communion, the debate even took on a positive tone. In 2016, the General Synod of the Church of England voted to encourage parishes to promote blood and organ donation among their members, framing it as an act of generosity rooted in Christian teaching (General Synod—February 2016, 2016). The vote was not merely symbolic: parish bulletins and diocesan campaigns were launched, and in London some churches opened their halls to serve as temporary blood donation centers, a gesture that would have been unthinkable in earlier centuries when blood was primarily associated with sacrifice and ritual purity.

The Lutheran world has also shown no hesitation in welcoming transfusion. Already in 1984, the Lutheran Church—Missouri Synod passed a resolution encouraging members to consider organ and tissue donation as an expression of Christian love, a statement quickly taken up by hospitals with Lutheran chaplaincies. In Scandinavia, where Lutheranism was the state religion, campaigns for voluntary blood donation often involved parish priests who reminded congregations that “Christ gave his blood for us, and we can give ours for others.” This pastoral language deliberately linked theology and medicine, echoing the central mystery of the Eucharist but applying it to the everyday act of medical charity (Childress, 1989).

The Reformed, Presbyterian, and Methodist churches, as well as most evangelical communities, likewise saw no theological difficulty in transfusion. In Methodist hospitals in the USA in the 1930s, chaplains already spoke of blood donation drives “to serve the wounded Christ” in the sick. Seventh-day Adventists, with their vast healthcare system, went further: in 1941, the Adventist hospital in Glendale, California, set up one of the first organized hospital blood banks in the USA, directly linking their mission of healing with transfusion services (Childress, 1989).

Other Christian groups adopted more cautious positions. Christian Scientists, who prioritize prayer for healing, tended historically to avoid transfusions, though they left the decision to individuals. By contrast, Jehovah’s Witnesses developed the most stringent opposition. In 1945, their official magazine, *The Watchtower*, announced

that Christians must “abstain from blood” not only in diet but also in transfusion. In 1961, the refusal of transfusion was declared a disfellowshipping offense, and hospitals around the world began to face legal and ethical challenges when Witness patients rejected life-saving transfusions. Some of the most dramatic cases occurred in the 1960s and 1970s, when courts in the USA and Europe had to decide whether children of Witness parents could be transfused against parental wishes. Over time, the Witness leadership softened certain aspects, allowing “fractions” such as albumin or clotting factors, and leaving the decision to conscience. Yet the refusal of whole blood transfusion remains one of the movement’s most distinctive features (Bock, 2012; Muramoto, 1998; Sarteschi, 2004; Singelenberg, 1990).

## Limitations

This study has several limitations. First, its scope is geographically centered on Europe and North America and does not examine in depth Christian communities in Africa, Asia, or Latin America, where interpretations of blood and medical practice may differ. Second, the narrative historical method depends on the availability and interpretation of written sources, which may introduce selection bias. Third, denominational positions are presented through official statements and representative writings, which may not fully reflect individual pastoral practice or lay beliefs. Future research may benefit from comparative analyses across non-Western Christian contexts and interdisciplinary approaches combining history, theology, and medical anthropology.

## Conclusions

The long and complex history of blood transfusion cannot be separated from the cultural and religious meanings that blood has carried through the centuries. Within Christianity, blood was never a neutral substance: it was the sign of covenant, redemption, and life itself. This symbolic charge inevitably shaped the way new medical practices were received. The legendary account of Pope Innocent VIII receiving the blood of young boys whether factual or not, demonstrates how the Christian imagination already associated transfusion with themes of salvation and danger. Two centuries later, in papal Rome, Giovanni Guglielmo Riva performed transfusions in 1667, showing that the Church was not initially opposed to experimentation. In the following decades, interest in transfusion waned mainly because of technical risks and adverse outcomes rather than because of ecclesiastical prohibitions. For nearly two centuries thereafter, no official ecclesiastical pronouncements addressed transfusion. Nevertheless, Christian culture did not obstruct the progress of medicine. On the contrary, it often provided the moral language—life as a gift from God, and charity toward one’s neighbor—that later became central to theological justifications of transfusion. Lutheran and Reformed contexts framed donation as a form of solidarity, while Catholic popular writings increasingly described transfusion as an act of Christian charity.

Only in the twentieth century did the Churches begin to speak explicitly. In the Catholic Church, Pius XII publicly welcomed transfusion as a therapeutic act when freely consented, and later popes have framed blood donation as an expression of solidarity and fraternity. Protestant and Orthodox communities reached similar conclusions, often going further in actively encouraging voluntary blood donation as a Christian duty. The notable exception remains Jehovah's Witnesses, who, from the mid-twentieth century, adopted a strict interpretation of biblical prohibitions on blood that continues to shape their medical practice today.

Thus, the history of transfusion reflects not only advances in physiology and clinical technique but also the enduring influence of Christian thought on society. It was within the Christian world that transfusion first met resistance and later found acceptance, guided by the same symbolic language that for centuries had surrounded blood. In this long journey, blood has remained what it has always been in Christian tradition: not simply a biological substance, but the sign of life, sacrifice, and communion.

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## Declarations

**Conflict of interest** The authors have not disclosed any competing interests.

**Ethical Approval** This study did not involve human participants or sensitive data and therefore did not require institutional ethics approval.

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